HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

Dec., 1931 25 Cents

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50 Ways to Use the Hourly Nurse

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Published by the American Medical Association

Edited by Morris Fishbein, M.D.

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Keith Don Musselman

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Contributors to This Issue

IN WINTER as well as in summer, the common drinking fountain may loom as a menace to public health. MARIE CORRELL of the Women's Bureau discusses "Those Dangerous Drinking Fountains" in this issue. . . . In the article, "What! No Plum Pudding," BLANCHE SEDER suggests a healthful display of foods for Christmas Day omitting the cloysome sweetness of plum pudding. . . . K. F. WARNER of the United States Bureau of Animal Industry in this issue writes about his hobby, a study of "Our Ancestors and Our Descendants."

"Tuberculosis in the Teen Age," by DR. J. ARTHUR MYERS of the University of Minnesota offers a valid solution for reducing this hazard of youth. . . . LUCY WETZELL MCMILLIN uses for a background of her story, "Christmas Eve in a Doctor's Home," her own experiences as the patient wife of a busy doctor. . . . DORIS W. MCCRAY proposes "Healthful Christmas Candies" of dried fruits and nuts.

"Choosing the Right Toys," by RUTH L. FRANKEL, a familiar contributor, is an article furthering world peace through the training of future citizens. . . . "Indoor Weather Making" is the subject of MAJOR W. O. WETMORE, sanitary inspector in the office of Public Buildings and Public Parks of the city of Washington.

"Fifty Ways of Using the Hourly Nurse" treats of one of the newer phases of nursing service. MIRIAM AMES, the author, is the executive director on the Chicago committee on hourly nursing. . . . FRANK T. CAMERON describes a method of education, recreation and work for the hospital child in his article in this issue. . . . DR. ROBERT A. KILDUFFE writes the second of a series of articles on the blood for HYGEIA.

"Pleasing Voices in the Home" presents a new angle of child psychology by HELEN BETHANY HAMILTON. . . . DR. CLAUDE LILLINGSTON writes about Sir William B. Leishman in his series of articles, "Pioneers of Medicine." Walter Reed will be his subject in January. . . . LOUISE E. WOLK tells of Des Moines' new opportunity school.

DR. W. W. BAUER concludes his series on "Communicable Diseases in the Home" with the article, "Ready for Release." MARGUERITE GODE offers a children's poem, and the children's story is by DOROTHY BRESNAHAN.

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Health and Food Advertising

ON ALMOST every advertising page of our popular periodicals one sees today advertisements for foods, for household necessities, for clothing, indeed, for every type of material used in our everyday existence, and in almost every instance the claims advanced are primarily health claims. The great accomplishments of preventive medicine during the last fifty years have made people health conscious.

Advertisers realizing that this interest in health exists seek for a health angle in the promotion of their products. Clothing is advertised because it keeps one warm, keeps off the wet and thereby helps to avoid colds. Furnaces are advertised because, along with the heat that they supply, they take care also of the humidity. Foods are advertised not only because they taste well and look well but because they are rich in vitamins and mineral salts and thereby promote health and growth. Sanitary devices associated with the daily hygiene of the body are claimed to be germ proof. Underwear is sold in sealed packages after sterilization. Corsets are sold not only for their effects on the figure but for their effects on posture and on the spine.

THE public needs constantly to be reminded that the food and drug laws do not control claims made in advertising. They are concerned wholly with the package and the label. Psychologists in the field of manufacture and advertising have realized the value of fanciful names, not only for their appeal but also because they conceal information. It is seldom possible to tell from the name of a product what it contains.

Because of this situation, the American Medical Association created, more than a year ago, a Committee on Foods. This committee has been carefully examining some hundreds of food products and the claims made for them. Already the committee has made decisions that are of the greatest importance for the public health. Consider, for example, tea, coffee, chocolate and cocoa! Most parents believe that tea and coffee are bad for children and that cocoa and chocolate are perfectly all right. Therefore, chocolate drinks are sold as health drinks. The committee is convinced that there is no reason why special health claims should be permitted for chocolate drinks.

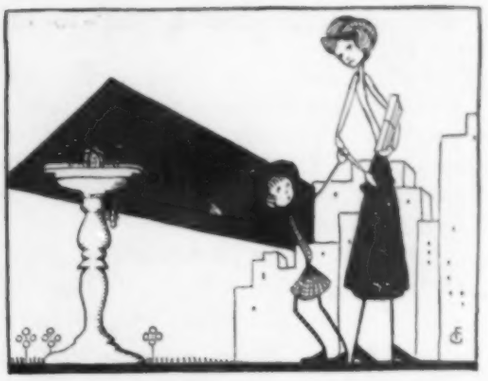
Malted milks are sold not only as having special value in digesting cereals with which they may be associated but even as sleep producers. There is not the slightest reason to believe that a malted drink is of any great importance in aiding the digestion of food in general. Certainly, there is no reason to believe that a hot malted drink will put a person to sleep more quickly than will hot milk, hot soup or a warm bath.

For several years the public has been besieged with the claims made for products containing various amounts of bran and cellulose. It has been argued that such foods are healthful in that they overcome constipation and relieve the associated symptoms. On the other hand, competent gastro-enterologists are convinced that too much roughage in the diet will irritate the digestive tract, and that its use may be exceedingly harmful in cases of ulcer of the stomach or duodenum and in cases of colitis. Hence the Committee on Foods has asked that the Council on Pharmacy and Chemistry of the American Medical Association be responsible for all bran foods for which medicinal claims are made.

THE Committee on Foods, having finished more than a year and a half of study, is preparing to issue a book called "Accepted Foods." It will list all the products that have been examined that are considered to be acceptable from the point of view of being honestly and informatively labeled and of being correctly and legitimately advertised. It will give full information concerning these products, their composition, their methods of manufacture and the claims made for them. If people ate intelligently they would undoubtedly have better health and a more enjoyable existence. "Accepted Foods" will make available the facts for those who wish to purchase food intelligently.

Those Dangerous Drinking Fountains

By MARIE CORRELL



"That is a dirty fountain. You must wait for a drink."

"MAMA! Papa! Give me a drink of water. I want a drink from the fountain. Lift me so I can drink from the fountain," cries Johnnie or Mary, and Mr. and Mrs. Average mama and papa do as they are asked. If Mr. and Mrs. Average realized that by lifting Johnnie or Mary to get that drink of water they were exposing the child to almost any disease that can be spread by secretions from the mouth or nose, including influenza, the common cold, diphtheria, scarlet fever and possibly some others, they might say firmly, "No, that is a dirty fountain. You must wait for a drink." And if enough Mr. and Mrs. Averages knew that some bubbling drinking fountains have a better chance of being safe and sanitary than have others, we should see insanitary bubblers replaced by sanitary ones just as we saw the common drinking cup abolished in public places and replaced by bubbling fountains.

Some bacteriologists and health officials have known for many years that all vertical-jet drinking fountains, in which the water bubbles straight up, retain the germs that are deposited by one drinker and serve them to the next drinker. Before 1920, four scientific studies of vertical-jet fountains showed that the constant flow of water did not wash away all disease germs placed on the jets and that bubbling fountains of this type were disease spreaders as dangerous as is the common drinking cup.

The drinker who lets his mouth touch the nozzle.

It was early suggested that bubbling fountains be designed with streams flowing at an angle rather than straight up so that the water could neither fall back nor be forced back on the jet. It is now recognized that even these fountains are not fool-proof unless the source of the jet is guarded to prevent persons from touching it with face or mouth.

These requirements and others that are necessary for the best drinking fountains were formulated by a committee of the American Public Health Association and adopted in 1930 as essential features in the design of sanitary drinking fountains. Persons who drink from fountains as well as those who are responsible for installing them will find the standards interesting. They are as follows:

1. The fountain should be constructed of impervious material, such as vitreous china, porcelain, enameled cast iron, other metals or stoneware.

2. The jet of the fountain should issue from a nozzle of nonoxidizing, impervious material and should be set at an angle from the vertical. The nozzle and every other opening in the water pipe or conductor leading to the nozzle should be above the edge of the bowl so that the nozzle or opening will not be flooded if a drain from the bowl of the fountain becomes clogged.

3. The end of the nozzle should be protected by nonoxidizing guards to prevent the drinker from coming in contact with the nozzle.

4. The inclined jet of water issuing from the nozzle should not touch the guard because splattering will result.

5. The bowl of the fountain should be so designed and proportioned as to be free from corners which will be difficult to clean or which will collect dirt.

6. The bowl should be so proportioned as to prevent unnecessary splashing at the point where the jet falls in the bowl.

7. The drain from the fountain should not have a direct physical connection to a waste pipe unless the drain is trapped.

8. The water-supply pipe should be provided with an adjustable valve fitted with a loose key or an automatic valve permitting the regulation of the rate of flow of water to the fountain so that the valve manipulated by the users of the

fountain will serve merely to turn the water on or off.

9. The height of the fountain at the drinking level should be such as to be most convenient to persons who use the fountain. The provision of several steplike elevations to the floor at the fountain will permit children of various ages to drink from the fountain.

10. The waste opening and pipe should be of sufficient size to carry off the water promptly. The opening should be provided with a strainer.

Women's Bureau Sets Up Standards

The Women's Bureau of the United States Department of Labor is charged by law to formulate standards to promote the welfare of wage-earning women. It presents the foregoing standards for the satisfactory service of drinking water as recommendations for places of employment in its recently published bulletin "Sanitary Drinking Facilities with Special Reference to Drinking Fountains." It is highly important that places of employment provide sanitary facilities for employees since large numbers of people spend many hours of the day in these buildings and must drink from the facilities offered. Mr. Average is not able to go to work when he catches a cold from a drinking facility in the office, store or factory, and he may carry germs home to his family.

The Women's Bureau, interested in this problem largely from the point of view of protection for women workers, has found in its industrial surveys that less than 15 per cent of the employers provide fountains of the angle-jet type, although more than 40 per cent of 1,506 establishments inspected in twenty-one states have some kind of drinking fountains.

But Mr. and Mrs. Average do not need statistical proof of the fact that insanitary vertical-jet fountains are still being installed and used. Any one who observes the fountains in parks, on street corners, in public buildings, even in new ones, knows that vertical-jet fountains may be found almost anywhere and that they are constantly being used by every one with perfect confidence that they are sanitary.

But children have been lifted for drinks so often, and mothers and fathers have taken a drink too, both at work and in public places, without becoming ill immediately that most people are more or less indifferent to what seems to them to be a vague possibility of danger and they will drink from whatever facility is available. Consequently it becomes necessary to prohibit the installation of insanitary types of fountains. This is a logical step for health officials who are spending effort on water purification. The whole object of water purification and careful plumbing is defeated by allowing pure water to be served in insanitary ways. Some action should be taken by the states to prohibit the use of insanitary fountains.

Change Is Not Expensive

Precedent for this has already been established in nearly all states by laws prohibiting the use of the common drinking cup. Although almost no action has been taken by state health authorities or state departments of labor requiring that drinking fountains be angle-jet, it is encouraging to know that in nineteen states angle-jet fountains are recommended as being more sanitary than vertical-jet ones. Since in many cases an angle-jet nozzle can be attached to the existing fixture in place of the vertical-jet nozzle with little or no other change, it is to be hoped that Mr. and Mrs. Average will insist that better drinking fountains be installed where they work and in their city so that they can with reasonable safety lift Johnnie or Mary for a drink of water.

Sanitary fountains have both inclined jets and guards.

By
Blanche Seder

Something is lacking at the most beautiful Christmas dinner when it must be eaten in a public place.

What! No Plum Pudding?

MORE traditions are connected with our celebration of Christmas than with any other holiday—Santa Claus, the tree, holly, mistletoe, the lighted candles, gifts to those less fortunate, and, best of all, the family gatherings.

During the past generation the multitude of Christmas stage properties has increased to such an extent that it threatens to cheapen our most beloved holiday and its customs. Although we all love Santa Claus—even those of us who would appear to be sophisticated and modern—a Santa on every corner and in every store becomes monotonous. Tinsel and glitter and frenzied buying are overstressed. Sometimes the idea of quantity creeps into the kitchen, and the cook bakes more cookies, cakes, pies and puddings than could possibly be eaten before they become stale. But, on the other hand, lighted trees are now so plentiful that every one, rich or poor, may enjoy their beauty. And the ten cent stores and bargain basements with their inexpensive toys and decorations have taken Santa Claus to millions of humble homes.

With this multiplicity of Christmas activities outside, the spirit of Christmas must be strengthened within the home by clinging more closely to the family traditions that make this holiday mean so much. At our home the tree would not be our tree were not an assortment of animal cookies among the decorations. The cookies are shaped with cutters that Grandmother used for many years, and even now my husband feels that Christmas has really begun only when he has found his childhood favorite, a cookie fish with a pink candy eye.

Established habits and customs bind the members of a family together as a unit and create the feeling that is always connected with home. Among the most cherished of these traditions is the gathering of the family around the Christmas dinner table. Although the spirit of the occasion is of much more importance than the food served, it is possible for the food itself to have some special significance, to become a family tradition.

Fortunately Christmas foods, like other Christmas customs, may be modified without in any way interfering with traditions. Why should we serve two kinds of fish, three kinds of game and four roasts because such dishes made up the regulation Christmas feast of several hundred years ago? We enjoy our electrically lighted tree ever so much more than one lighted with the old time candles, because it is safe. Likewise we derive more pleasure from our modern meals because they are digestible.

Christmas dinner should be the best dinner one can prepare, but not, by any means, the most elaborate or expensive. It should include favorite family dishes, a traditional Christmas meat or dessert and a special treat to make it different from an ordinary dinner. Perhaps goose is the Christmas bird in your family, or you may prefer baked ham or the roast beef of Old England. It may be that you made a special jar of pickles after an old family recipe for the particular occasion. The vegetable may be baked corn because your mother always served baked corn, or an out of season vegetable. For the dessert, there may be mince pie or plum pudding or whatever dessert is associated with Christmas.

Children Should Help in Preparations

Every member of the family, down to the littlest tot, should have a part in the preparation of this meal. My 4 year old does all of the "egg beatering," as he calls it, and last year he was delighted to place a row (a rather crooked row) of raisins down the tummy of the gingerbread man. Older children like to have the entire responsibility of preparing and serving a single course, such as the cocktail or salad. Last year my neighbor's 12 year old boy decorated a cake to represent a small cottage for the center piece on the Christmas dinner table. The menu should be planned to include certain things each child can do.

Fortunately a dinner menu is so flexible that it is possible to retain a certain type of meal even though changes are made in the individual dishes. In our home we like to have turkey for Christmas, but if the family purse is undergoing such a depression that buying a turkey would mean mortgaging the family Ford, we have chicken instead. In that case we serve the chicken with our favorite dressing and the very best giblet gravy that we can make.

Sometimes the customary menu must be altered because of the amount of labor involved. There are, after all, many phases of the Christmas celebration equal in importance to the dinner. Consequently the mother of the family should plan a meal that will not absorb her time and energy to the exclusion of other things. Christmas should be an enjoyable time for mother as well as for the rest of the family.

After all, it is not the memory of a particular food or menu that children will carry with them in later years. Christmas dinner in a public dining room may include the favorite home dishes, an excellent turkey prepared by a well trained chef, perfect cranberry jelly, delicious plum pudding, and yet something is lacking. The turkey is not the same as when father carved it at the table. No chef can make giblet gravy like mother used to make. The beautiful flowers on the table cannot blot out the picture of our favorite center piece of fruit in an old pewter bowl.

Farewell to the Christmas Pudding

Plum pudding had been the Christmas dessert in our family for as long as I can remember, but now—at last the truth is out!—we do not have plum pudding for Christmas! This is how it happened.

Several years ago, because of unusual circumstances, including a very new baby, there were only three, my husband, my mother and I, at our Christmas dinner table. Our dinner was simple, but unusually good, and we thoroughly enjoyed every bit of it. As we lingered before serving the pudding, my husband remarked that so far the dinner was perfect, that anything more would spoil it. Couldn't the plum pudding be served the next day? It could and it was, with the result that we enjoyed the rest of our Christmas day more because we did not feel stupid and uncomfortable from overeating. Since then we usually serve plum pudding at some time during the holiday festivities, but not as a part of our Christmas dinner. After all, is it not better to enjoy the feast as a gourmet who derives his pleasure from the excellence of the food rather than as a gourmand who who demands quantity rather than quality?

This year we have two reasons—very lively reasons, aged 4 and 6—for making certain changes in our traditional dinner menu. Plum pudding, mince pie and rich conserves are not on approved diet lists for small boys. On other days the older folk may indulge in foods not good for children, but on Christmas we want to enjoy the whole dinner together.

Do not gather from these remarks that our dessert is to be bread pudding. Not at all! There are ever so many delicious desserts that we can enjoy with our children. This year we are to have ice cream molds. Ice cream is not new to our boys, but the molds will be a great

treat not only to them but to the rest of us. The sparkle in their eyes and their enthusiastic comments will be most enjoyable.

When Bobbie was 2 he was delighted with the candles on his birthday cake, and proud of the fact that he knew there were two of them. But for the cake itself he cared nothing at all. After one or two bites he pushed it aside. Cake had not been a part of his regular diet and he had not cultivated a taste for it. Plum pudding is quite different from the foods our boys know and like, while ice cream is one of their favorites and is always a treat, as they do not have it every day.

If, however, you wish to serve plum pudding or mince pie or some other heavy dessert to the older members of your group, it is quite possible to prepare simpler things for the children that they will prefer. What child would want to exchange a tiny frosted cake topped with a green Christmas tree for a brown pudding? Frozen desserts, jellies or cake may be made into Christmas packages or stockings or may be molded to represent favorite animals or toys.

It would be impossible for me to suggest a menu for your family as it should be built around your own favorite dishes and customs, but perhaps my own dinner plans will be of some help in your planning. This is the menu for our Christmas dinner:

Mint Grapefruit Cup

Curled Celery		Spiced Crabapples
Baked Turkey	Dressing	Giblet Gravy
Mashed Potatoes		Cauliflower
Cranberry Jelly		Crisp Rolls
Tomato Jelly Salad		Cheese Straws
Ice Cream Molds		Coffee

The following are some of my favorite recipes for these dishes:

Mint Grapefruit Cup

2 cups cubed pineapple
1 grapefruit
3 tablespoonfuls lemon juice
20 or 30 after dinner mints

Place the grapefruit sections, pineapple cubes and lemon juice in a bowl. Add the mints and let it stand until it is dissolved. Chill it thoroughly. Garnish with green cherries.

Cranberry Jelly Salad

2 cups cranberries
1½ cups water
1 cup sugar
¾ cup diced celery
1 tablespoonful granulated gelatin
⅓ cup chopped nut meats

Sort and wash the cranberries. Add one cup of water and cook for twenty minutes. Rub through a sieve. Add sugar and cook for five minutes. Add the gelatin, which has been softened in ½ cup of cold water. Stir it until it is dissolved. When the mixture begins to thicken, add the celery and nuts. Turn into molds that have been rinsed with cold water. Serve on lettuce leaves with salad dressing.

Cranberry Jelly

4 cups cranberries
2 cups sugar
2 cups water

Pick over and wash the cranberries. Add two cups of water and boil for twenty minutes. Strain through a sieve, rubbing through as much pulp as possible. Cook for three minutes. Add the sugar and cook for two minutes. Turn into a mold and chill.

Cranberry Ice

4 cups cranberries
3½ cups boiling water
2¼ cups sugar

Pick over and wash the cranberries. Add the sugar and water and cook them for ten minutes, skimming during the cooking. Rub through a sieve. Cool and freeze for about four hours. This mixture may be frozen in one pound baking powder cans, packed in equal parts of salt and ice, or frozen in a refrigerator tray.

Christmas Package Salad

Mold any jellied salad in square molds or in a large square pan and cut it into squares. Place a square on lettuce on a serving plate. Arrange strips of pimento or green pepper across the square, like ribbons on a package. Place a sprig of parsley at the intersection of the strips.

Christmas Tree Cakes

Bake a sponge cake or a white cake mixture in small muffin tins. Ice with white icing. Slightly soften a large green gum drop in hot water and shape it into a cone to represent a tree. Dip it in unbeaten egg white and roll it in tiny colored cake candies. Dip half a tooth pick in melted chocolate and insert it in the gum drop to make the tree trunk. Place a gum drop tree on each cake, with coconut or icing heaped at the base to represent snow.

Bread Dressing

3 cups bread crumbs
4 tablespoonfuls melted butter
1 stalk celery chopped fine
1 teaspoonful lemon juice
⅔ teaspoonful salt
¼ teaspoonful pepper
½ tablespoonful finely minced onion
1 teaspoonful sage, if desired

Place the bread crumbs in a strainer and pour hot water over them. The crumbs will become moist but not soggy. Combine all the ingredients and use them for stuffing the fowl.

Tomato Jelly Salad

2½ cups canned tomatoes
1 teaspoonful chopped onion
½ teaspoonful salt
2 teaspoonfuls sugar
4 teaspoonfuls gelatin
¼ cup cold water
vegetables

Add the onion, salt and sugar to the tomatoes and let it simmer for about twenty minutes. Strain this. Soften the gelatin in cold water and then add it to the hot tomato. Stir it until the gelatin is dissolved, and chill. As it begins to thicken, add chopped celery, asparagus, peas, or any vegetable desired. Pour it into molds and chill.

Our Ancestors and

Including the story of the eighteen black and the eighteen white buttons

Pages from a family album.

AN OBSERVANT dentist once remarked that those who would have strong teeth should carefully select their grandparents. From the practical standpoint, that advice has obvious limitations but it expresses a fundamental principle. Many of the characteristics, both physical and mental, in which a person glories or with which he struggles are direct gifts from his ancestors. Scientists may differ as to the origin and appearance of our earliest progenitors but they all agree that the inherent qualities of each generation come from the generations that have preceded it.

As descendants we are all interested in our heritage. As prospective ancestors we are even more concerned with the endowment that we can grant to our children. There is always the stimulating possibility that somewhere in the line the spark of true genius will burst into flame. There is also the more fervent hope that enough of the practical, prosaic characteristics will glow with sufficient brightness to enable the new offspring to enjoy his own life and to create, as well, some happiness for others.

If we would make the most of ourselves and provide an environment for our children that will develop their natural strengths and help them overcome their natural weaknesses, it is desirable that we know the characteristics of our ancestors and the laws by which they are handed down to succeeding generations.

The first rule of heredity is that like tends to produce like, or the likeness of an ancestor. The present generation with rare exceptions possesses only those natural characteristics of form and function that have already been the property of some or several of its forebears. The reason is evident as soon as one understands nature's laws of reproduction.

Each person starts his growth from a single cell. Within that cell is a small collection of material known as the nucleus. Roughly speaking, the nucleus is composed of chromosomes—small, rod-shaped bodies that unite and work in pairs. One of every pair of chromosomes represents the paternal heritage; the other one the maternal. The number of pairs vary with the species of the animal. Man acknowledges twenty-four pairs. The color, shape, capacity—in fact,

Our Descendants

By

K. F. Warner

all the inherent characteristics of the coming offspring—are carried to it by the chromosomes.

When a member of a new generation matures and reproduces, he passes on the heritage given to him. To speak more accurately, he passes on but half of his inheritance. This is a fact that should be well understood. Because that is the case, many matings in the livestock world are disappointing. Yet, if it were not so, constructive breeding and improvement in our flocks and herds would be unlikely, if not impossible. The advantages of purebred stock and of purer and purer purebred stock are largely based on this event in the physiology of reproduction. Each parent gives but half of its inheritance to an offspring.

It will be recalled that the chromosomes are the bearers of heredity and that the cells of each species of animal contain a certain normal number. At conception, the male sperm cell seeks out and fuses with the female egg. If each contained the normal number of chromosomes, the offspring would start life with twice the number that he needed.

Mother Nature has guarded against such disaster. When the egg cell matures it finally splits or divides in two parts, each part containing but half the normal number of chromosomes, one from each pair. One of these halves constitutes the ovum, or egg cell, that may develop into the young. The other half, containing one from each pair of chromosomes, is discarded and lost.

Sperm cells mature in much the same fashion. They also finally divide in two parts, each part containing only one of every pair of chromosomes. It so happens that all these divided sperms are active but only one of them fuses with and fertilizes the ovum. That function completed, the rest soon disappear.

Half of the inheritance of every sire and dam is transmitted to the offspring; the other half is lost with the discarded egg and unused sperms. Herein lie the possibilities of success and failure. If the chromosomes possessing a more desirable combination of inherited traits are saved, the offspring may excel his parents. If the reverse is true, the trend is backward.

Suppose you were to put eighteen white buttons into a box, each one being tied to a black button. Suppose then that you were blindfolded and asked to draw them out, one pair at a time, and cut each pair apart, saving one button and throwing its mate away. Now let the eighteen buttons that were saved, one from each pair, represent the chromosomes that carry the inheritance with which a high-producing dairy cow endows her first calf.

Reassemble the buttons in their original eighteen pairs of black with white, readjust the blindfold and repeat the separation. How strange it would be if the second attempt should present the "second calf" with the same number of white and black buttons. How extraordinary it would be if the identical eighteen buttons were selected in both trys.

Combine these chances for variation in the maternal heritage with an equal number in the paternal and—but we must not go into higher mathematics.

New Combination in Each Generation

Like tends to produce like or the likeness of an ancestor but each generation contains a new combination of chromosomes with the resulting differences of inherited characteristics. The animal and plant world are filled with examples in which these new individuals possess values of production, beauty and speed that are less or greater than any of their ancestors.

The pages of history contain similar examples. The familiar names of many soldiers, statesmen, artists and merchants belonged to men who showed abilities greater than their parents. Circumstances have frequently assisted in the development and prominence of these men but the unexpected spark of leadership or genius that they possessed was a gift from their ancestors. Unfortunately that flame has often faded with the advent of the succeeding generation. Some recombination of the chromosomes has replaced the higher value with a lower one.

The exact number and identity of the characteristics that are determined by each pair of chromosomes is still unknown, as are the number of pairs that have an influence on any given feature or ability of a person. It is believed, however, that performance such as speed, rapidity of gain, vigor and fertility are affected by several or all of the pairs of chromosomes.

The livestock breeder endeavors to produce more desirable animals and then develop them into strains that will look or function alike. He strives to create a foundation herd with a quality or performance suitable to his needs that can be counted on to produce offspring with equally desirable characteristics.

To do that he develops what is known as a purebred herd. By selection, rigid elimination and wise mating he tries to produce animals in which both halves of every pair of chromosomes in their germ plasm carries the inheritance desired. If both buttons are white, symbolically speaking, it will make no difference which one is discarded when the cell matures and divides. Such an animal is pure to that characteristic.

When every chromosome in an individual carries the same inheritance that is possessed by its partner in this pairing system, that individual is truly pure. When both male and female are pure to the same characteristics, a line has been established that will breed true.

Inbreeding, the mating of closely related animals, is a shortcut that leads quickly to the heights of superiority or just as swiftly down into the depths of mediocrity. The blood lines are concentrated or purified most rapidly by this method, but the faults are fixed as well as are the virtues. Sometimes the good predominates; more often some weakness such as infertility or lack of vigor prevents the development of the good features. Inbreeding is more truly a laboratory method in the livestock world. It should be used only by those crusaders who can afford to stand the loss, should it occur.

The general principles that govern the transmission of inheritance in the lower animals also govern the heritage of man. The chromosomes present each new individual with his portion of the past; the maturation of the germ cells again conserves but half the "buttons" and discards the other half. What wonder, then, that inconsistencies of offspring should be numerous in the human race.

Stubborn Traits May Be Rooted in Past

There are few of us whose ancestry does not trace to several shores or mountain ranges. Few family albums but contain tall figures and short, brown eyes and blue, rugged faces and scholarly ones. There is no reason for children to be alike. The products of the family tree are also subject to Mother Nature's laws.

It would be futile to predict the combination of inheritance that has been granted to ourselves or to our children, but we can survey the past and note the strengths and weaknesses that prevail, that might be handed down. These should serve to make us more intelligently watchful and sympathetic. We must not guess that "he can't help it" and let the error pass. Rather we should remember that the stubborn traits and faults we should eliminate are possibly rooted in the past and must be corrected with more wisdom and persistence than a casual habit.

In contrast is the never-ending joy that comes from seeking signs of inherent talent or ability. They are always present too. Each new life may contain a combination of characteristics purer for certain things than any of his ancestors. It is a parent's privilege and obligation to provide his child with health and happiness and to surround him with a sympathetic, observant understanding that will help him find his road.

TUBERCULOSIS in the TEEN AGES

By J. Arthur Myers

"Rest training" is urged for all boys and girls in their teens, as well as for star athletes.

THE prevalence of tuberculosis among teenage girls and boys demands attention. The fact that tuberculosis constitutes a great problem among students was evinced by the attendance of physicians and health workers from every part of the United States at the recent first meeting of the National Conference on College Hygiene.

The greatest cause of this widespread communicable disease is the lack of scientific control. A simple but effective means of checking tuberculosis consists of first applying the highly specific yet harmless tuberculin test to all students. The test shows up with a high degree of efficiency those who have the germs of tuberculosis in their bodies. It obviates the necessity of further phases of the examination in many cases.

Applying the Tuberculin Test

Those who react negatively to the tuberculin test do not require further examination and in many places they constitute from 60 to 70 per cent or even more of the student body. Those who react positively to the test must have careful examinations to determine whether their infection has reached the stage of being dangerous to themselves and to others with whom they associate. The x-ray film is the best procedure we have at present to determine this point with reference to the lungs. Once this is done, the subsequent work becomes relatively simple.

The tuberculin test should be applied to each student who enters a college or university whether he enters the preparatory department or the senior class. In addition to this, the tuberculin test should be applied each year, and probably every six months to all students who have previously reacted negatively to it and should always be followed by an x-ray examination of the chest in all students who react positively. There will be students, who on first examination, both for their good and that of the student body, should immediately be excluded and placed on treatment and other students who may remain in the school if they are kept under close observation.

Schools provide ideal places for applying the method. But one must keep in mind constantly that by no means do all girls and boys of this country go to high school and only a small percentage go to colleges and universities. Obviously the remaining number will not be reached by such a method of control. Our schools, therefore, should be used as demonstration centers, as aids to the medical profession and as centers of health instruction for the girls and boys who pass through them.

Prevalence Reflects on School

A physician who has served for many years as dean of a medical school in an Eastern state was recently asked if tuberculosis had caused much of a problem in the student body. He replied that every year from five to eight medical students break down with tuberculosis. He had seen this number fall ill from this disease as long as he had been dean.

In these days of enlightenment it is a decidedly adverse reflection on a college, a university or a high school to have girls and boys

fall ill from tuberculosis. It is difficult to change public opinion. So many persons have been accustomed to the "will-of-God" idea that they are unwilling to appropriate funds for proved methods of tuberculosis control in our institutions. It is safe to predict that within a decade an efficient method of prevention will have been adopted in practically every institution in which teen-age girls and boys are brought together. But one who has a clear vision of controlling tuberculosis, who appreciates the awful economy we have practiced in the past, shudders at the thought of waiting ten years for a method that is already sufficiently well proved to be adopted. When this method has been employed, in the neighborhood of 1 per cent of the students have been found to have tuberculous infection that is already serious.

Prevention Is Good Economy

The total cost of making the necessary initial examinations should not exceed $175 per hundred students. If only one case of tuberculosis is found in the entire 100 or if only one case is found in 500, the economy of the method is sound. If no one were to be considered but the person in whom tuberculosis is developing and in whom the disease is brought under control before it makes him ill, the economy would still be sound.

In eleven years of experience in examining university students for tuberculosis, I have seen hundreds of girls and boys who came for examination because they were ill. In many, the disease had been present for months and in some cases for years before it made them ill.

The following case is a good example: In the fall of 1920 a student reported to me for an examination because of loss of weight, loss of appetite, cough, sputum, fever and rapid heart beat. His resistance was being used up in fighting the disease and his school work was suffering. Extensive tuberculosis was found in his lungs. Moreover, he was spreading the germs of tuberculosis among his associates. The infection in the lungs was not of recent origin, and there were definite reasons to believe that he had been spreading the germs of tuberculosis for a considerable period. This boy was sent to a sanatorium where he remained for eight years. A conservative estimate of the cost to the state for such a patient is $20 a week. The total cost for these 416 weeks amounts to $8,320. It was not until the fall of 1930 that this patient was able to resume his studies; ten years have been blotted out of his life as far as personal progress is concerned. This ten years' loss of time to the student and to society in general was not included in the cost of $8,320 to the state. Better economy could have been practiced in tuberculosis control work in the past had we known the methods that are now familiar to us.

During the years that I have been engaged in this work, enough university students have fallen ill with tuberculosis and have been treated in tax-supported institutions at an expenditure sufficient to have more than provided for an ideal method of tuberculosis control. In the current year I have diagnosed tuberculosis in seven students who were in need of care in tax-supported institutions in addition to the diagnosis of cases in patients who were not believed to need institutional care at the time they were examined. It will cost the state approximately $7,280 a year to treat these seven students. Fifty per cent of our students have their private physicians and the university physicians do not see all in whom tuberculosis develops.

Not only the individual student who falls ill should be considered, but also his associates whom he has contaminated with the germs of tuberculosis. Past methods have permitted enough spreaders of tubercle bacilli on campuses to provide for a perpetual harvest of tuberculous students. Not once but many times I have traced tuberculosis in a student to a former roommate who had the disease.

In the last few years many causes have been suggested for the high incidence of tuberculosis among teen-age girls and boys. The wearing apparel of young women has been criticized. By some it has been held totally responsible for the high incidence of tuberculosis among teen-age girls. Indeed so much has been said without evidence to substantiate statements that the public is fairly well convinced that clothing has much to do with development of tuberculosis. Those who insist that the wearing apparel of recent years is accountable for the greater incidence and the higher tuberculosis mortality among girls of teen ages than among boys meet with discouragement when they are confronted with the fact that this difference has existed at least since 1870 and probably longer only there are no records to show it.

Indoor Dress Should Be Light Weight

When a girl in the teen age is found to have tuberculosis, frequently the mother instructs the physician to inform her daughter that she must wear heavier clothing. Many times I have disappointed such parents by stating that their daughters should dress merely comfortably. The buildings in which most girls live and work are heated to summer temperatures and they need to dress no differently in winter than in summer. They should be provided with warm top clothing from head to foot when going outside, and the light-weight clothing is suitable while they are indoors. I wonder if the girls of this generation are not wiser and more fortunate than those of other generations as far as clothing is concerned. Possibly the older generation should take a lesson from them, even

though they sometimes feel that they do possess superior judgment.

The same parents often insist that their children undergo terrible exposure to the elements during sleeping hours. By sleeping on the outdoor porch or in a room with wide open windows in all kinds of weather, this so-called fresh air, often loaded with contaminations, and at a dangerously low temperature, may materially reduce resistance and offer additional opportunities for respiratory infections. This is but another example of fallacious reasoning.

Tuberculosis has been attributed to the diet, and here again the greater incidence of disease among girls is said to be due to diet fads. We have definite evidence that diet plays a considerable rôle in the development of infections. The human body expends a great deal of energy in twenty-four hours. If it is provided with sufficient food, a considerable reserve of energy is always present. If the diet is not sufficient, not only is the reserve used up but the normal tissues may be attacked to supply energy demands.

Proper food contains the essentials of body growth and repair and may be likened to the fuel of a great locomotive or the motors of an airplane. It would be poor economy to start a locomotive or an airplane on a long journey that must be completed on a definite schedule with inadequate fuel. If the human body is to compete successfully with others in both a mental and physical way, it is poor economy to provide it with poor or insufficient fuel. If, in addition to the usual demands of everyday living, we superimpose on a body that is supplied with insufficient food such a hazard as tuberculosis, the natural result is obvious to any one.

Scacheri

Every student in the teens should be tested yearly for tuberculosis.

Vitamin A has been shown to have much to do with prevention of infections, including tuberculosis. It is important that this vitamin be abundantly present in the body at all times. It is found in green foods, such as green beans, green peppers and the green leaves of plants, and in certain meats and animal products, such as liver, eggs and milk.

A higher incidence of tuberculosis is one of the products of the present-day educational system. The accelerated pace of the modern world is reflected most clearly in the activities of teen-age boys and girls. The extracurricular pursuits of high school and college students have increased proportionately to the stress that has been laid on them by the educational system. No opportunity for energy conservation has been made in the schools to equalize the extra expenditure of energy. Sufficient rest for every student, not alone that of the school athletes, must be stressed. Every student must enter into the "rest training" that his personal program demands, just as the star performer whose physical prowess is the pride of the school does in order to fulfil his position.

Tuberculosis is caused by a germ, the tubercle bacillus, and is communicable, spreading from tuberculous patients to other persons. The danger lies, then, in contact exposure. We can safely say that tuberculosis develops in no one who has not had contact exposure with a tuberculous person or with an animal that is a carrier of tubercle bacilli. In this connection there are two significant facts to keep in mind. One is that the contact may be indirect or direct. An example of indirect contact is in contaminated foods. A cow may be so tuberculous that her milk will contain large numbers of tubercle bacilli, which may start disease in the body of a child many miles away who has consumed the milk. Foods may be contaminated by tuberculous persons who work with it, then shipped long distances and the tubercle bacilli will still be active. Direct and prolonged contact is of greater importance. The teen-age girl or boy whose mother or father or any other close associate has died of tuberculosis is in danger. If the disease does not develop during the teen ages, the danger remains throughout life.

The failure to recognize the communicability of tuberculosis is due mainly to the interval between exposure and illness from the disease, which often is so great that even the patient himself fails to associate the two. A mother takes her children into a home in which there is diphtheria. In a few days, one or more of her children fall ill. It is the same disease, has the same symptoms and the same treatment is administered. It requires little argument to convince the mother that diphtheria is communicable because the time interval is so short. But in the case of tuberculosis, the time interval is rarely a matter of weeks; it is nearly always a matter of months and even years. Yet all this time the tubercle bacilli are in the body, but

(Continued on page 1113)

Christmas Eve in a Doctor's Family

"Little Pal, there is a sick lady out

IT WAS cold. The thermometer registered ten degrees below zero. The wind was blowing the snow in huge drifts. The papers predicted "continued cold." Supper had waited for half an hour.

"Mother, may I have something to eat?"

"Can't you wait a bit, dear? Daddy will surely be here soon, and it is Christmas Eve."

"I know it is! 'Spose our Daddy will stay with us tonight?"

"I hope so."

The telephone called her. "Mrs. MacDonald speaking. . . . No, I do not know just where that farm is, tell me. . . . Through Azalia and one mile east? . . . Yes. Turn right and it is the fourth house on the left side of the road. . . . You say it is Mrs. Franklin who is ill. . . . Surely I'll tell Doctor as soon as he comes in."

She turned from the phone. She had wanted him at their own fireside that night. She hated to face the disappointment in her little daughters' eyes when they learned that their father must go out again that evening.

A car stopped in front of the house. "It's Dad! Oh, Daddy, hurry, it's time to eat supper, and then—the tree!"

The spirit of Christmas seemed to fill the house as the doctor greeted his wife and little girls. The children's delighted voices echoed through the house as they went to the table. Mrs. MacDonald told him of the call. She tried to keep the concern out of her voice.

"I didn't expect to leave the house tonight. But, of course, if they need a doctor—"

"Can you get through the drifts out that road? So many have been stuck today."

"I know that. But I have a good shovel. Let's eat."

"Let's do, Daddy, I'm so hungry."

It was a jolly meal. Jean, who was 4, was wondrously happy. "Daddy," she said, "when we light the tree tonight shall we sing about Bethlehem and the star and the Baby?"

He pushed back from the table, "Come here, Little Pal, and sit on my lap. There is a sick lady away out in the country who needs your Dad. I'm sorry, for Dad had wanted to spend tonight with his girls. But we couldn't have a happy time if we kept thinking of that lady suffering, and no doctor. I'll make a bargain with you. Be my brave girl. Make Mother happy by being a little pal to her. I'll be thinking of my girls and come home as soon as possible. See, Baby seems to understand. She's clapping her hands as though she knew it was Christmas. And tomorrow, what fun we shall have!"

They checked over his bag. His wife followed him to the door.

"We shall be thinking of you. Good luck!"

"Thanks, I'll be thinking of my three girls. Gee, you are good sports."

And Dr. MacDonald was gone into the black and white of the winter's night.

They lighted the tree. They tuned in the radio. They listened to the lovely old Christmas carols. They sang with the singers sometimes when the song was about Bethlehem and the star and the Baby. Jean hung up her stocking after she had played around the tree all eve-

in the country who needs your Dad."

ning. After she was in bed she asked, "Mother, couldn't you rock me a little tonight after you put our baby to sleep?"

"Indeed I could. Keep quiet while I put her in the little bed."

In a few moments the mother held her older daughter in her arms.

"Mother, did the wise men bring gifts to Mary and Joseph?"

"I think not. Their gifts were for Jesus."

"Was it Christmas for Mary and Joseph too?"

"Yes, they were very, very happy. You know when children are happy that always makes their parents joyous too."

"Are you and Daddy glad when I am glad?"

"Happier than I can tell you, dear."

Soon eyelids drooped over shining eyes. A smile always to be remembered was on the face of the sleeping child. Tenderly the mother put her daughter in bed, tucking the covers in securely against the winter's cold. The child had kept her bargain, had been a real little pal. Then as though emotions were too much for the mother she knelt.

"Oh, God, may they always smile at Christmas time." With a kiss for each little girl she went down stairs, for the telephone was ringing.

A PHYSICIAN'S WIFE FIGHTS LONELINESS, AND WINS PEACE

By

Lucy Wetzel McMillin

"Mrs. MacDonald speaking. . . . Oh, I am so glad to hear your voice. I just finished putting the girls to bed."

Her husband's deep voice assured her that all was well. "The drifts are bad. I shoveled out three times between there and Azalia. You had better get some rest, for I can't tell how long I'll be needed here. Good-night!"

"Good-night." She turned to the room. Its emptiness made her lonesome. Such a way to spend Christmas Eve! Then quickly followed another thought. She was glad that he could take such responsibilities and find success. Quickly she finished placing the presents on and about the tree. She filled the stockings as well as Santa could have filled them. She sat at her desk and wrote letters to the home folk. As she did that she relived the Christmases she had known as a little girl. Again she saw her family around the tree and again she stood with them at a window looking at a brilliant star.

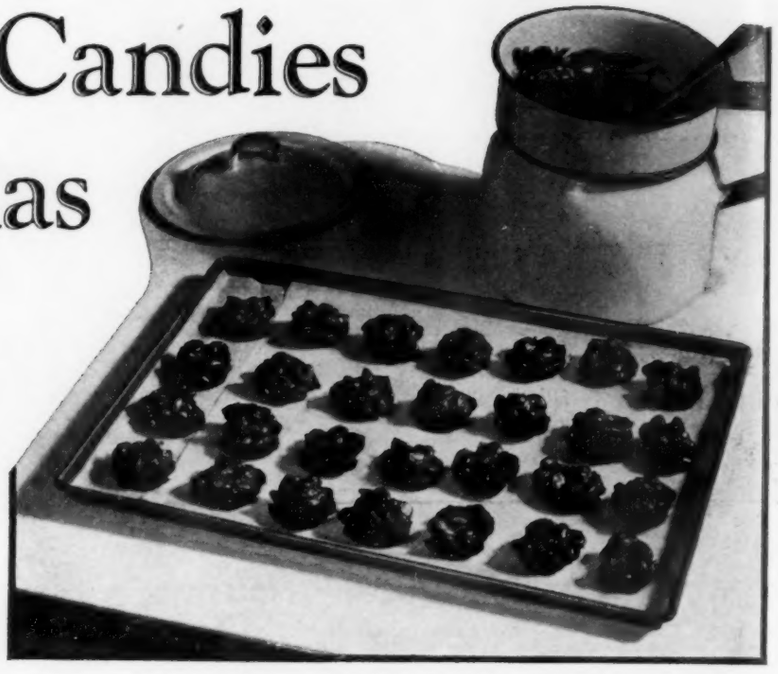
It was only eleven. The fire still burned brightly on the hearth. Her thoughts went out over the snow. She wondered just when the doctor would be coming home. She stood at the window looking out on the world that seemed strange and lonesome. The whiteness made it look so vast. The waiting seemed almost too much. Above that white and black expanse the stars seemed unusually bright. As she looked one star seemed even more brilliant than the others.

"It's great to be out where the fight is on, the fight between Life and Death. It's also great to stand and wait—if one has patience enough," she murmured half aloud.

A new magazine lay on the table. She curled up in an easy chair in front of the fire. She read on and on. Always there was the feeling of waiting. From the radio came the story of Good King Wenceslaus. The carolers sang "Noël, Noël, Born Is the King of Israel." It was long past midnight. *(Continued on page 1158)*

Healthful Candies *for* Christmas

CONFECTIONS THAT ARE SUITABLE FOR CHILDREN



Tempting health sweets for the holiday season.

By

Doris W. McCray

DO CHILDREN cry for spinach? No. Do they cry for sweets? They most certainly do. They need some healthful confections that will satisfy their craving without spoiling the appetite for other foods at regular meals.

Confections made with a large percentage of dried fruits are healthful for children. Dried fruits, having been picked for drying when their sugar content was at its height, which is 30 per cent higher than when picked for fresh or canned fruit, have a concentrated fruit sugar that is invaluable in the diet.

Children at play after school, strenuously exercising, use up a tremendous amount of energy. Food for this energy must be supplied to keep them healthy and happy. Fruit confections are excellent sources of quick energy as the fruit sugar they contain is ready for absorption in the body without digestion.

By combining various dried fruits in confections, not only has the food value been increased

RAISIN MARSHMALLOWS

4 tablespoonfuls gelatin
1 teaspoonful vanilla
1 cup cold water
2 cups sugar
⅛ teaspoonful salt
2 cups seedless raisins
Confectioners' powdered sugar

Place the gelatin, vanilla and ¼ cup of water in a big bowl. Add the remaining water to the sugar and salt and boil to 236 F. or until it spins a thread. Pour this over the softened gelatin and beat it with a wire whisk until it is cool and thick; add the raisins and mix it thoroughly. Pour it in a shallow pan that has been buttered and sprinkled with powdered sugar. Dust the top with sugar and allow it to stand over night. Then cut it into squares and roll it in confectioners' sugar. Remove the candy from the pan before cutting it.

APRICOT CONFECTION

4 tablespoonfuls plain gelatin
½ cup cold apricot juice
½ cup hot apricot juice
4 tablespoonfuls orange juice
2 teaspoonfuls grated orange rind
2 cups sugar
1 cup purée from cooked dried apricots

Soften the gelatin in the cold apricot juice. Add sugar to the hot apricot juice, bring it to a boil, add the gelatin, orange juice and orange rind, and boil slowly for twenty minutes. Remove this from the fire, add the apricot purée and mix it thoroughly. Pour into a wax paper-lined pan and allow it to set. Cut it in the desired shapes and roll it in powdered sugar.

but the fiber of the fruit gives texture and character to the product, giving the child something definite on which to chew.

At the Christmas season, the mother likes to be a little lenient in the matter of sweets but the usual results are upset stomachs and lowered resistance to colds. The candies listed here, particularly if eaten only after meals, will make the holiday season less productive of ill effects.

HEALTH SWEETS

¼ pound sweet chocolate
2 cups cooked, pitted prunes
¾ cup seedless raisins

Melt the chocolate and stir it in the raisins. Lay the pitted prunes out flat and drop a spoonful of chocolate on each. Chill.

FIG PASTE

1 cup dried figs.
1 cup nut kernels
⅓ cup candied orange peel
1 cup sugar
1½ cups water
3 tablespoonfuls gelatin
½ cup orange juice

Wash the figs and remove the stem ends. Put the figs, nuts and orange peel through a food chopper twice, using a medium cutter. Add the orange juice to the fruit. Soften the gelatin in one half cup of cold water. Add the remaining cup of water to the sugar and when it boils add the softened gelatin and boil it for exactly twenty minutes, stirring often to prevent it from burning. Remove it from fire, add the chopped mixture and blend it thoroughly. Pour into a shallow pan and allow it to harden. Cut it into desired shapes and roll them in powdered sugar.

FRUITED LOAF

1 cup dried figs
1 cup seeded raisins
1 cup prunes
½ cup brazil-nuts
12 marshmallows
¼ cup cooked fondant
Toasted coconut

Boil the prunes ten minutes, drain, cool and remove the pits. Put the raisins, figs, prunes and nuts through a food chopper using a medium sized cutter; add the fondant and mix it thoroughly. Cut the marshmallows into pieces and mix them into the fruit. Divide the fruit in half and shape it into loaves about 1½ inches in diameter. Roll each in the toasted coconut and chill it thoroughly. Cut it in thin slices. To toast the coconut, spread it in a shallow pan and bake it in a moderate oven (350 F.) until it is a delicate brown. Stir frequently.

Variations of above recipe:

1. Omit marshmallows and fondant.
2. Substitute walnuts for brazil-nuts, add ½ teaspoonful of grated lemon rind. Shape it into loaves and roll them in more chopped nuts. Chill and slice them.

FRUIT BALLS

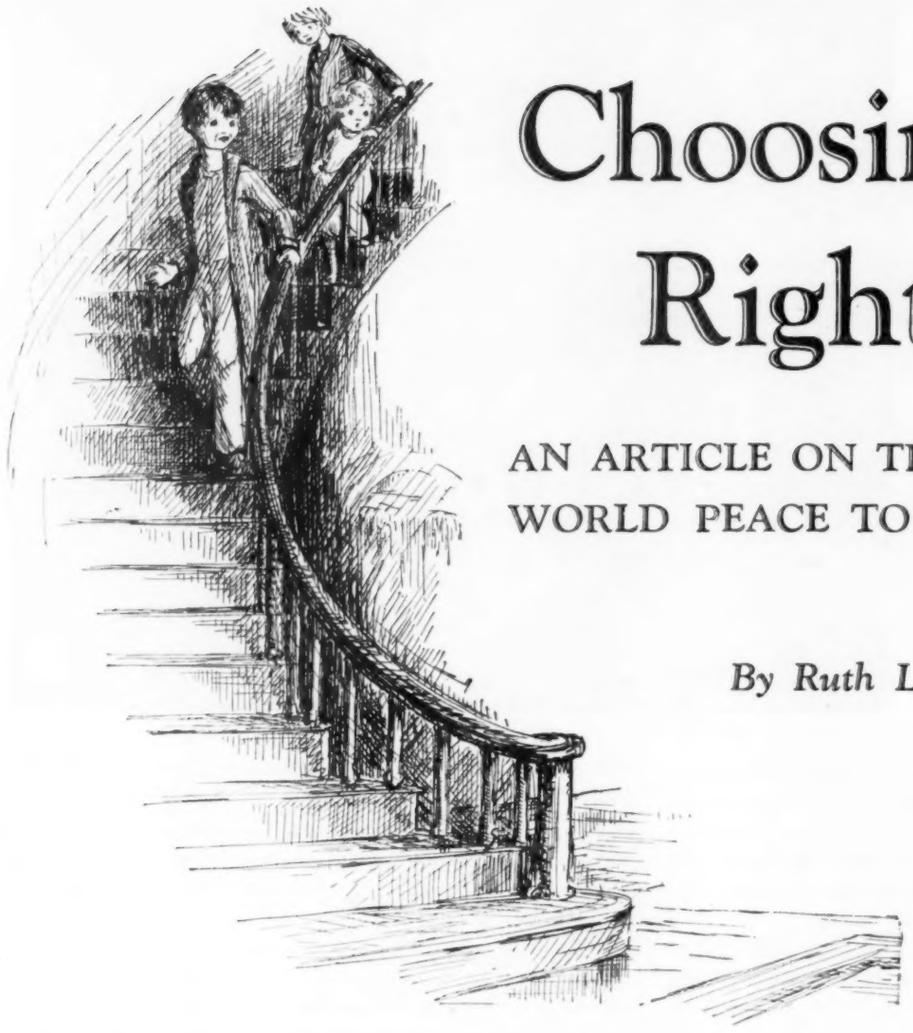
1 cup seedless raisins
1 cup dried figs
1 cup prunes
1 cup toasted coconut

Boil the prunes for ten minutes; drain, cool and remove the pits. Wash the figs and remove the stems. Put the raisins, figs and prunes through a food chopper using a rather fine cutter. Mix it well, stir it frequently, shape it into balls or little sticks about 1½ inches long, and roll them in toasted coconut. These may be rolled in chopped nuts or sugar.

FRUITED AGAR CANDY

¼ cup agar-agar
2 cups water
2 cups sugar
1 cup white corn syrup
1 cup dried apricots
1 cup dried peaches
1 cup prunes
2 teaspoonfuls lemon juice
1 teaspoonful lemon extract

Boil the apricots two minutes, drain, and cut them fine. Boil the peaches four minutes, remove the skins and cut them in pieces. Boil the prunes five minutes, remove the pits and cut them fine. Soften the agar in water about thirty minutes; then melt it over hot water for about thirty minutes. Pour the hot agar over the sugar and two thirds of the corn syrup. Boil it to 220 F. Stir it constantly to prevent it from burning. Remove it from the fire and stir it in the remaining corn syrup. When the candy is lukewarm, add the lemon juice, lemon extract and fruit. Stir it until it is well mixed. Pour it into a waxed paper-lined pan. Let it sit over night. Turn the candy out, remove the paper and cut it in squares. It may be served plain or rolled in sugar.



Choosing the Right Toys

AN ARTICLE ON THE TEACHING OF WORLD PEACE TO OUR CHILDREN

By Ruth L. Frankel

As they come downstairs on Christmas morning, will they find toys of peace or of war?

THERE was a sound of drums, of childish voices raised in song, of little feet tramping down the street. Mrs. Dale, looking out of the window, beheld her own three children with several of their playmates marching joyously to "war." They all wore paper hats; some carried flags. Two had drums; the others held long sticks, rifle-wise, against their shoulders.

"Henry! Tom! Jean!" called their mother. "How would you and the other children like some lemonade and cookies?"

Instantly the army disbanded. Hungrily, they trooped in and assisted in the preparation of the feast. As they ate and drank, out on the sunny side porch, they all listened eagerly to the mother's story of hungry little boys and girls all over the world, who also loved sweets and cool drinks and of the many ways in which mothers satisfied this universal need. When the party was over and everything was cleared away, they settled happily down to hide and seek without another thought of their war game.

But not their mother. Long after the shadows had lengthened into evening she sat wondering how, in a world that must learn to recognize its own integrity, she could teach her children peace and tolerance and good-will.

The problem of training children to a wider outlook on life, to a sense of common brotherhood and a feeling of responsibility toward all mankind, is facing parents and educators today with an urgency that demands solution. With the realization of the psychologic importance of the child's early years, there has arisen a new need, that of definite toys of peace and a technic of presenting play material that will furnish the right background and associations for feelings of world-mindedness. Race prejudice, patriotism in the narrow sense of "my country the biggest, best, strongest," provinciality of outlook, all arise in childhood, and are often emphasized by play and fixed in character at an inconceivably early age. Since so slight a fact as membership in a nursery school at the age of 2 or 3, in which play is cooperative rather than competitive can tremendously influence the formation of a child's character, educators everywhere are beginning seriously to seek out new means by which seeds of tolerance may be planted.

Heretofore parents have been urged not to make gifts of toy guns and lead soldiers and to discourage actual war play but have had no concrete suggestions as to peace substitutes.

A Japanese party to which the guests wore costumes and were entertained with a doll fête.

The realization that toys in themselves may be educationally sound, yet completely neutral, such as a pair of roller skates or a baseball, has only lately been reached. Such toys are valuable to the child, but parents who would like to teach peace must seek more positive means. At the Christmas season when new toys, books and games are being purchased, it is well to keep this point in mind.

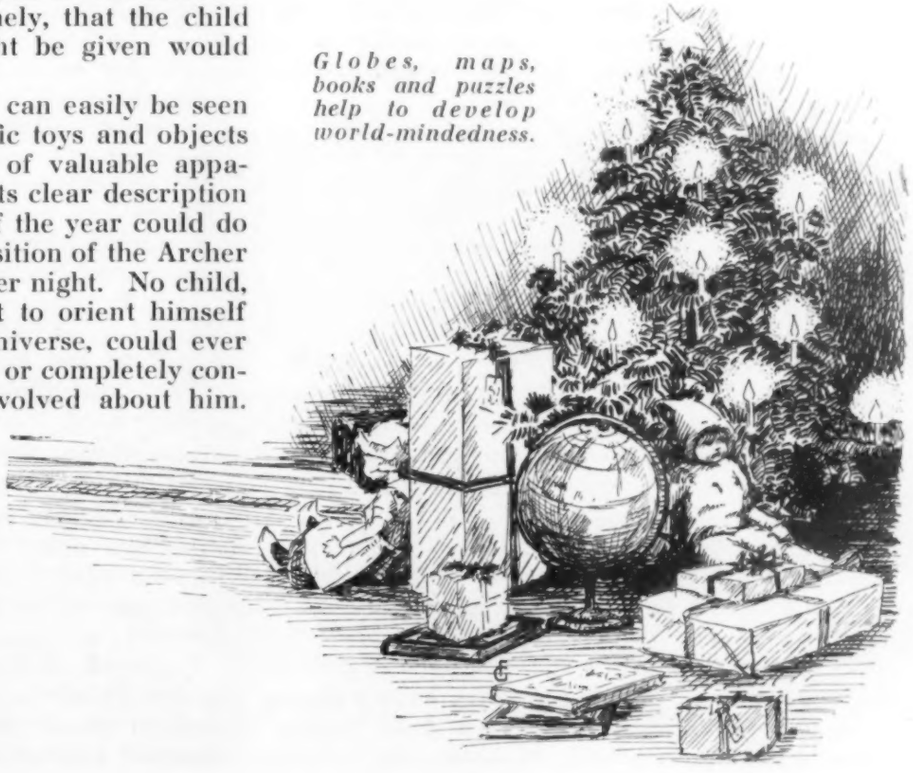
The Pennsylvania branch of the Women's International League for Peace and Freedom held an all-day conference recently on parents and peace, which included not only speeches and round table discussions but also an actual exhibit of play material. This material ranged all the way from books to microscopes, from dolls to posters. Everything in it was selected with one idea in mind; namely, that the child to whom such a thing might be given would find it broadening.

From this point of view it can easily be seen that the table full of scientific toys and objects was more than a table full of valuable apparatus. The star finder with its clear description of the heavens at all times of the year could do more than teach the exact position of the Archer and Cassiopeia on a December night. No child, interested enough to attempt to orient himself in a timeless, measureless universe, could ever again be completely arrogant or completely convinced that the universe revolved about him.

Likewise, the child who is given one of the fascinating new biology sets or a chemistry outfit is lifted far from a local point of view. Science is universal. Scientists pride themselves on working for humanity and rejoice in bestowing their discoveries on the world; so the child whose experiments lead him to the many fields of scientific adventure is likely to step beyond boundaries and apart from patriotic segregation. Microscope and telescope, a moving picture camera, the postcard projector with its collection of postcards showing glimpses of many lands, field and hour glasses, cameras, a sun dial, thermometers, storm guides, all arouse impartial scientific curiosity and make petty patriotism a bit difficult to achieve.

Other tables in this peace exhibit contained maps of the world, maps of Lindbergh's flights, maps of the world of books and maps of adventure. Several globes, varying from a large impressive one, to a tiny one for the desk included a puzzle globe, in sections, each one of which contained a map puzzle. All children, and especially boys, love maps, and most of them find these not only fascinating but extremely useful in their job of understanding themselves and their relationship to a universe of interesting people and activities.

Stamp collections, coin collections and mineral collections furnish another inspiration for a certain type of child. The young collector who makes a serious hobby of his gathering of materials usually acquires, along with the stamps or coins, a fund of information about the places from which they come. Certainly it should be easy for any intelligent parent to seize on such a feeling and turn it into an active interest in other lands, manners and customs. One child of my acquaintance has a stamp col-



Globes, maps, books and puzzles help to develop world-mindedness.

lection that is a record of his trip abroad. There are stamps from every place that he visited, including revenue stamps and similar curiosities, and on the first page is a neat little map of the journey. Not all boys, of course, are fortunate enough to be able to collect their material first hand. But nowadays stamps are available to any one who seeks them, and a child's enthusiasm can be greatly aroused through such a collection of tiny representatives of other lands.

The dolls in the exhibit mentioned were dressed in costumes of many lands. A number of them were the proud possessions of one little girl, who had been collecting them for several years. Many of hers had been brought to her from foreign countries. Some she had dressed herself; a few had been her mother's. Such dolls are the most obvious of international toys. Their acquisition is a joy to any little girl, and one or two are enough to start a spirited search for information concerning the land from which the dolls come. Just as the child playing with a soldier doll unconsciously makes up war experiences, so the little girl who has a doll representing a child in another country instinctively wants to know much about such a child, her home and her food. Thereby the intelligent parent gets an opening for teaching tolerance and peace and may be ready whenever questioned with pictures, stories, songs, maps, phonograph records and games.

A stamp collection stimulates active interest in other lands.

Not long ago a little girl in the first grade in a prominent progressive school brought to class one morning a tiny pair of Dutch wooden shoes. The class grew interested and asked questions. As a result when a wise teacher seized on this interest and played up to it, those shoes furnished a basis for a term's work. The class embarked on a Dutch project. They built with their blocks in one corner of the room an elaborate Dutch house. They furnished it, even to a Dutch stove and flowering window boxes. They sought out Dutch stories and pictures and songs. They vied with one another in bringing to class information about Holland. By the end of the term they were all filled with a feeling of respect and interest for the people of a land far away.

So with the dolls. Each one can lead a child to real adventure and can inspire parent and child alike with a sense of being part of a great civilization in which all countries have a share.

At the exhibit a large screen held posters, imported from Poland, showing fascinating, vividly colored pictures of peasant life in a Polish village. Another table was covered with skis and snowshoes, carved wooden animals, hand-made rugs showing snow scenes, and other evidences of life in the far North. There was a Russian corner, containing a child's set of furniture painted in gay colors, dolls, bright toys, nested boxes, scarves, boots, smocks and a variety of objects of interest, all flaunting their reds and greens and golds in a manner to cheer the grayest of northlands.

Other lands offered toys and clothes, furnishings and pictures. Yet the things emphasized were the universal things, clothes and food and toys and household things, so that children being introduced to other civilizations through such mediums would feel a kinship rather than too great a difference.

One of the suggestions at the exhibit was a wealth of costumes from other lands. Several of these had been collected by one family of children while traveling abroad. There were a little suit of Chinese pajamas, several complete Dutch outfits, including wooden shoes, a Spanish costume, an Italian peasant's, and one or two others. Every adult knows the feeling of being different that comes with the mere donning of strange clothes. And every child who hooks himself into the garments of people far away gets something of a sense of communion with those people. The possession of such a wardrobe means endless opportunities for dressing up, for home dramatics and for research in other ways and customs.

There are many games for children today stimulating interest in the world as a whole. Many are of the parchesi type but embody trips to various points on the map, and there are quite a number of geographic games. Some are played in the same way as the old game of authors, including many facts about the world on their cards. Among these is a game of modern paintings, another about modern cities.

Other simple educational material includes cut-outs of foreign villages, paper dolls, books showing costumes and views of other lands to be colored and sometimes to be cut out. All these are obtainable wherever children's toys are sold.

There are also some scrap books to be made by the children. A book of ships containing pictures of all sorts of boats, old and new, domestic and foreign, can be culled from maga-

zines and from the circulars of travel bureaus. Another book that shows houses all over the world may be made in large part from the advertisements in household magazines. Most children enjoy gathering material for such a scrap book; it furnishes splendid rainy day amusement and is helpful in whiling away the hours for a convalescent.

Blocks, clay, crayons and the more plastic play materials make splendid Christmas gifts. The newest blocks are of many shapes and sizes, even including curved blocks that could be utilized for building anything from an Eskimo igloo to a Greek temple. Clay and paints can be used to make pottery representing the native work in many different lands, and the other materials similarly directed are rich in potentialities.

Other toys of value in stimulating interest in other parts of the world include Indian tents and various play houses and doll houses, many of which are of distinct period styles.

In the exhibit mentioned there were musical instruments; Indian drums, Chinese gongs and Russian accordions drew much comment. The particular value of musical instruments lies as much in their use as noise makers, which release the child's love of rhythm and noise, as in their musical suggestibility. Often from such simple toys grows a genuine interest in the more melodic side of music, and the expression of a universal language.

Books, of course, are splendid gifts; they are truly the windows through which the child sees the world. The stories he hears and the books he reads can do much in stimulating the child to a feeling of fellowship; moreover, the field of choice is great. Mothers who are eager to open these magic casements for their children can be guided in their choice by selecting books about children and ways and customs of other countries, by choosing folk tales and legends that bring such lands closer to small imaginations, by ignoring books about war heroes and battles and by selecting those that stress the heroes of peace, Pasteur, Lindbergh, Froebel, Socrates and Galileo. Supplementing these with world history and geography, with science and the stars, parents will again aid the child to place himself in a world in which all men are bound by ties of mutual need and economic interdependence.

Games, parties and theatricals are suggested as additional means of teaching peace. Folk games and dances are always inspiring. Costume parties that take the children to other lands can do much to awaken their interest. At a recent Japanese party the small guests were requested to come in appropriate costumes; they were seated on the floor in lantern-hung rooms, were served rice cakes and similar dainties, and were entertained with a doll fête in Japanese style.

By such means parents may train their children to thoughts of peace. The essence of it all boils down to developing a feeling of unity with the rest of the world. Interest must replace suspicion, cooperation must drive out competition and friendship must supplant hatred if it is to be achieved. Many educators feel not only that it can be done but that it must be done, so that the children now growing up will face their changed and changing world with a set of feelings and emotions ready to meet their problems and with a genuine desire for world brotherhood and world friendship.

"Lincoln and the Doctors"

A NEW HYGEIA SERIAL

DR. MILTON H. SHUTES, whose hobby is the study of Lincoln, is making an original contribution to Lincolniana by his book to be published in HYGEIA *beginning in the January number.*

The material is in narrative form and is an inquiry into the life and accomplishments of Lincoln from a new angle. Hitherto scattered and unappreciated facts about the great national hero are woven into Dr. Shute's story. Besides being fascinating reading, the work is of historical and scientific interest.

Underwood and Underwood

Andrew O'Connor, Irish-American sculptor, is shown at work on a marble bust of Lincoln for the Gallery of Modern Art in Dublin. He is working from a plaster model.

Order Your Own Weather

AND THE INDOOR WEATHER MAKER WILL SUPPLY IT

By W. O. Wetmore

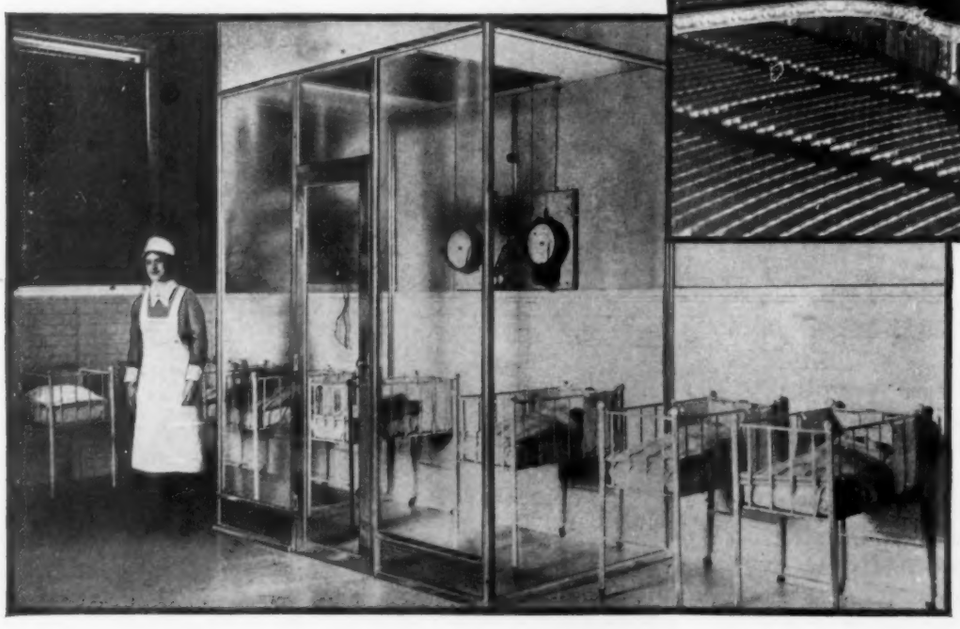
IMAGINE, if you can, an actual weather maker. Hot, cold, wet or dry—pick up your menu and give your order, for the indoor weather maker can supply it. He is, of course, a magician and must have his props. He needs a chamber with a fine spray of water to wash the dirt from the air, another chamber in which to dry the air, a fan to propel it along, a room in which to refrigerate it, and a heating chamber. You must shut the windows permanently and give him full sway.

The conception that we have only to open a window to get good pure air is exploded. Air is a wonderful commodity and deviations in its composition, temperature, humidity and speed reflect in man's output of energy. Undue variations influence him profoundly and may cause death. Furniture, carpets, books and other objects also deteriorate and are destroyed by changes in the weather.

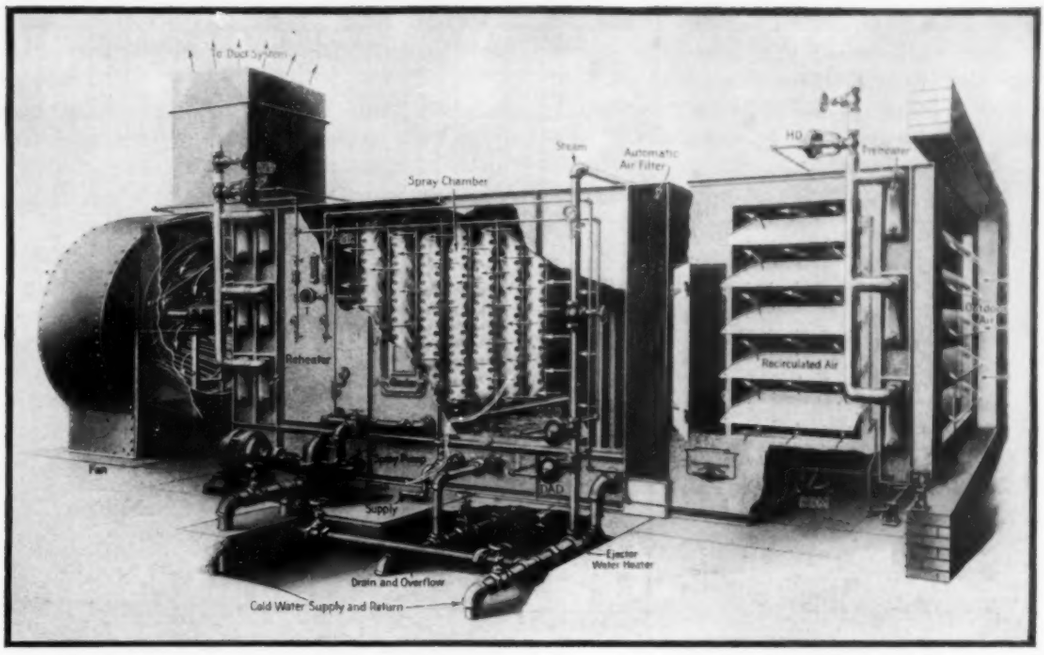
Air surrounds us inside our clothing and regardless of whether we wear much or little, we breathe the air and abstract its oxygen, and to it we contribute moisture, carbon dioxide and slight amounts of poisons and germs. Industry fouls the air with gases, dirt, odors and bacterial life; the streets pollute the air with every motion in traffic, so it is not so lily pure after all.

Air conditioning, or indoor weather making, is an extension of ventilation with the view to

The lavish interior of the Roxy theater in New York City; some of the difficulties that had to be overcome in providing proper air distribution are apparent.



Incubation surroundings for new-born babies provided at the Alleghany Hospital, Alleghany, Pa.



Weather making on a large scale is expensive and requires much apparatus. This is a diagram of a humidifier.

removing the impurities from the air. Our magician waves a wand and the fan rotates, propelling the air through a filter and into a chamber with numerous sprays of water, where it is washed free of dirt and other impurities. This water is cooled by a refrigerating device, heat is added if desired and moisture is extracted to exactly the right degree. It is now conducted by a duct system to the rooms to be conditioned. Here all is in readiness; the area is tightly shut against outside air and insulated to maintain an equal temperature.

When office buildings are heated by ordinary means the temperature varies greatly; the rooms are likely to be overheated and there is usually no means of adding moisture. These are expensive faults for they use up fuel in excess.

In theaters in which air conditioning is installed for cooling, there is usually too much variation between the outside temperature and that of the inside. There should not be more than 15 degrees difference and 10 is perhaps generally better. Even this will give one a slightly chilly sensation, which, however, soon disappears. Certain persons who are subject to hay fever and other bronchial affections obtain almost immediate relief when they enter air-conditioned rooms because of the absence of dirt, and they take refuge in the motion picture houses in the trying days of fall.

The trend toward artificially made indoor weather will continue and will gain momentum as it is further demonstrated that atmospheric comfort is attainable and that man's efficiency increases with ideal atmospheric conditions. The individual will also find that he can create in his own home the ideal weather he has been chasing all over the world to find. The avaricious financier will discover sooner or later that one can shut out the noises on the lower floors of office buildings and still have admirable weather within, and that business will pay well for these surroundings. Hospitals will find that the operating room may be just the right temperature, without dust or grime, that the patient may be followed around with heated air to offset shock, and that incubation surroundings may be provided for the new-born. Moreover, houses, business buildings, hospitals and laboratories are actually experiencing this boon. It is already well tried out. It is not certain, though, whether the individual may not suffer from the changes of going from one extreme to the other. Artificial sunlight is being produced, but it is not known whether it is particularly beneficial for the well. It is known to be a great aid in combating certain diseases.

The ranges of temperature, air movement, oxygen content and humidity as it affects the human being is being carefully studied in many laboratories.

In furnishing artificial weather to groups of workers, we must remember that certain factors add or abstract heat, treasure it or dissipate it. Some persons wear insufficient clothing, some too much; some clothing retains body heat, some does not. One person will eat food little calculated to produce heat, others will eat candy, fats and other such foods. This man does manual labor and that one clerical work; one is active, another resting. Among them there will be a difference of opinion as to when a room is comfortable. This can all be adjusted if the temperature remains at a standard, even though individual differences exist.

A human being confined in a small chamber will cause the temperature of the room to rise and the humidity to increase surprisingly. His temperature will rise also and he will develop a headache and a feeling of oppression. Respiration will increase slightly, the number of heart beats will become rapid and even if the subject is allowed to breathe fresh air through a hole in the room, the result is the same and the reduction neither of temperature nor of humidity will relieve him. On the other hand, if another person breathes the same bad air through an opening and remains outside the enclosure, he is not similarly affected.

The evil effects are due to three factors: lack of oxygen, increase in temperature, and increase in moisture; these will cause death even if no poisons exist. It is a physical problem not a chemical one. Recent experiments made on the effect of indoor atmospheric conditions yielded the following observations:

1. There is an inability of the human body at rest and in still air to compensate for saturated atmospheric conditions exceeding 90 F.

2. The exhaustion and weakness following subjection of human beings to a very high temperature and humidity for a short period is not so severe as subjection to a moderately high temperature and humidity for a longer period.

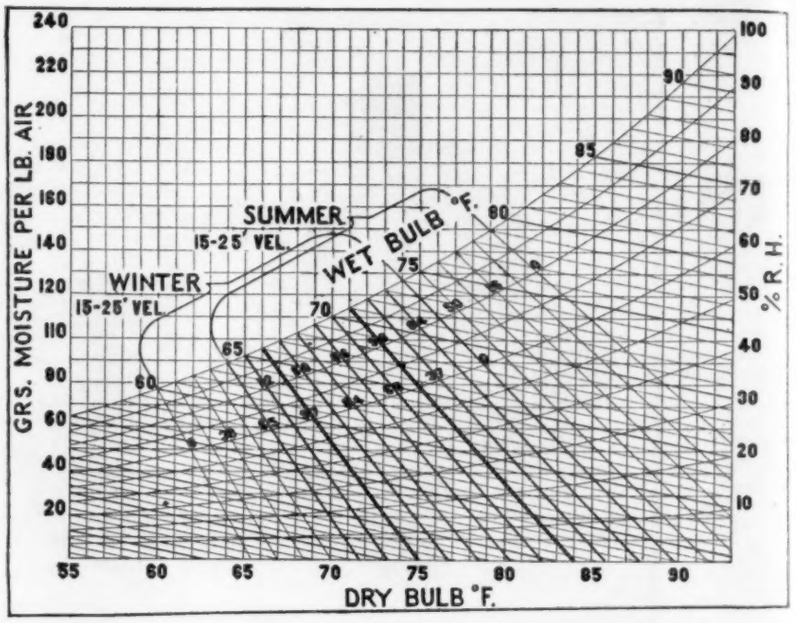
3. The pulse rate rather than the rise in body temperature apparently determines the extent of the discomfort experienced by the subject.

Subjects became most uncomfortable after the pulse rate exceeded 135 pulsations per minute and complained of unbearable and distressing symptoms when the pulse exceeded 160 per minute. The highest pulse rate recorded was 184 per minute.

4. Blood pressure falls with a moderate increase in temperature and humidity; the systolic pressure rises and the diastolic falls, thus increasing the pulse pressure in high temperatures and humidities.

5. The curve of rectal temperature shows a close parallelism with the curve of the temperature of the test chamber at constant humidity.

6. Subjection to high temperatures and humidities produces no marked change in the respiratory rate.



ACCEPTED WINTER AND SUMMER COMFORT ZONES

ON THIS chart the vertical lines indicate dry bulb temperatures, the slightly diagonal lines represent wet bulb temperatures, the steeper diagonal lines represent effective temperatures.

Any condition along a given effective temperature line produces the same sensation of warmth or comfort to the average individual. In other words, a dry bulb temperature of 80 F. and a wet bulb temperature of approximately 58 F. give the same condition of comfort as a dry bulb temperature of 74 F. and a wet bulb temperature of 67 F. These two points, it will be noted, lie on the 71 F. effective temperature line.

The conditions of relative humidity in these two examples are respectively 24 per cent and 70 per cent, indicating that as the temperature is reduced the humidity must be increased for the same sensation of comfort.

All the observations on this chart are at a rate of air movement ranging between 15 and 25 feet per minute. Were the air velocity increased the effective temperature lines would be diverted more toward the horizontal.

Five hundred persons were subjected to these tests, and the numbers registered on the effective temperature lines on this chart, such as 0, 16, 50, 84 and 98, indicate the temperatures that they found most comfortable in passing from one condition to another.

In the area covered by the summer comfort zone 98 per cent of the subjects found an effective temperature of 71 F. most comfortable, while in the winter comfort zone, 97 per cent of the subjects found an effective temperature of 66 F. most comfortable.

This chart represents studies made by the American Society of Heating and Ventilating Engineers and by Yoglou and Drinker of the Harvard School of Public Health.

7. Loss of weight varies with the individual, the loss increasing with the length of exposure to high temperatures and with the severity of the test.

8. The hemoglobin content of the blood increases proportionately to the loss in weight.

9. A relative but not absolute increase in the blood count was found in the tests made.

10. The rate of perspiration varies with the atmospheric conditions. Substances lost from the body through the perspiration do not change in their proportions to one another.

11. Examination of the urine was negative for albumin and sugar, and its specific gravity was increased.

12. Perspiration is the chief factor in producing irritation and inflammation of the eyes.

13. Ice water, even when swallowed in large quantities, did not cause cramps under the conditions of the experiments.

The following conclusions have been reached: First, air motion exerts a cooling effect on the human body in atmospheres in which the temperature is less than that of the body; in temperatures above that of the body air motion increases the discomfort, but the rate of change in reactions cannot be doubled by doubling the velocity of the air. Second, within the range of the experiments no appreciable change in the period of endurance resulted from air motion as indicated by the series of tests in still and in moving air. Third, the pulse rate appears to be the best index to the severity of the discomfort. Fourth, correlation between pulse frequency and body temperature is not constant.

One must realize that weather making is expensive and requires much apparatus, but far less than formerly. It would not be practical to use ice in cooling air on a big scale or perhaps on a small one, because it does not melt fast enough to accomplish the mission. A great deal of water is needed. Air must be piped; it must be conveyed where needed and the apparatus requires room. When we think of installing air conditioning we must get an engineer who makes a business of this one thing, and all things being equal we will get results and our money will be well invested.

Already air conditioning has become a necessity in theaters, factories and skyscrapers. In Washington the Capitol has artificial weather installed in the Senate and House of Representatives chambers. Here the long air ducts ramify the spaces in the walls and come out over the ceiling. If you climb to this elevation you will find many hundred feet of galvanized pipes as big as a man's body and looking like a great octopus; these carry pure air to the entrance in the ceiling of the chambers. In the old system there were registers in the floor, which conducted hot air to the chambers; when they were removed they were found clogged with tobacco, having been used as cuspidors in the good old days. The White House has installed the system in the offices of the president, and there it is effectual and extremely satisfactory. It should be installed in the reception rooms of the White House, as these rooms become unbearable when they are congested.

Small individual units are now manufactured which act in a practical manner in cooling single rooms and which are not expensive.

In Washington a great building project is being carried out and in the Department of Commerce building, the first unit, the secretary has had air conditioning installed in his suite of offices. It is natural that others will wish the same, and why not?

Tuberculosis in the Teen Ages

(Continued from page 1101)

the resisting forces are sufficiently great to hold the disease in abeyance. Indeed it may be held in abeyance throughout the entire lifetime of the person. On the other hand, it may develop to sufficient proportions to cause illness at any time in life. The person who has been exposed intimately over a prolonged period of time is rarely if ever free from danger.

There is little excuse nowadays for the girl or the boy to become ill from tuberculosis without knowing that the disease exists in his body. With a given history of intimate and prolonged contact exposure, x-ray examinations of the chest should be made frequently so as to detect the infection before it causes illness. In many cases, small areas of tuberculous disease are visible on the x-ray films of the chests of girls and boys who were apparently normal but who had been exposed at some previous time; it is as long as five and ten years before the disease is sufficiently extensive to make them ill. Just why this illness appears so frequently in the teen-age period no one is certain.

Probably one of the factors in the spread of tuberculosis among teen-age girls and boys is direct contact exposure outside the home. Transmission of the disease from one adolescent to another is one of our greatest problems. Kissing is an active factor in spreading the infection. The statement has been made that if the practice of kissing could be abolished the tuberculosis death rate would decrease 50 per cent in from ten to twenty years. But the solution of the problem is not by way of legislation against kissing. The perpetuation of the human race depends on this instinct.

Exposure to extremes of heat and cold, improper diet and failure to conserve energy contribute to the growth of tubercle bacilli after they are in the body. But belief that the body of every teen-age girl or boy contains the germs of tuberculosis is without foundation at present. It may have been true at one time but the number who grow to adult life without having germs of tuberculosis is rapidly increasing. Education is having a great influence on the situation and, with control methods, can stamp it out.

On Christmas Morning

Ewing Galloway

DOWN the stairs comes smiling little Peter. May he come to toys that are durable and suitable for his age and skill, to holiday meals that are simple and wholesome, and to a day free from overstimulation. May he not be robbed by adoring relatives of outdoor playtime, his afternoon nap and the chance to be himself.

Fifty Ways to Use

The Hourly Nurse

By MIRIAM AMES

Appointments are made by telephone.

THIS is the age of specialization when people demand skill in every line of service. Skilled nursing care is needed too, but because there is so much talk about its prohibitive cost, people often do without it. If the care that is required can be condensed into an hour or two and this time only be paid for, a great deal of expense can be avoided. People are learning to use time, space and expense-saving devices. Hourly nursing service is one of these.

For more than fifteen years graduate nurses have made sporadic attempts to do hourly nursing either "on their own" or through various professional organizations. Today this service is available in many urban centers, in towns and in rural communities.

Hourly nursing service is growing comparatively slowly in popularity. This may be due to the fact that either patients do not know about it or no one remembers to suggest it. Doctors, patients and families have known for years of graduate nurses who could be called at a moment's notice for day or night duty in homes, hospitals or hotels as the case might be. These nurses may be engaged for twelve-hour duty in hospitals or for twelve- or twenty-four hour duty in homes.

In a hospital, a very ill patient may have two nurses if constant care is desired. He considers himself fortunate to be able to command every minute of his day or night nurse's attention. In a home, the patient may engage two twelve-hour duty nurses or he may have a twenty-four hour nurse. The latter arrangement is commendable in certain instances for it is less expensive than hospital care and less costly than two twelve-hour nurses. The twenty-four hour nurse is entitled to four hours' relief during the day and if her rest is continually broken, she requires more than four hours off duty. A second nurse is called to relieve her for four hours charging for a half day's service. The twenty-four hour nurse in the home becomes a member of the household and meals and sleeping quarters are provided.

At the stroke of ten, the hourly nurse appeared.

Mr. S. is finishing his fourth week in a hospital and is leaving for home within an hour. For the first three weeks of his illness he had two special nurses, one on day and the other on night duty. During the last week he was able to get along with the day nurse who agreed to go home with him for twenty-four hour duty. Now that Mr. S. is better he can review the events of the last four weeks. He has paid the nurses and the hospital and has an understanding with his physician concerning the cost of the medical care. As he mentally reckons up the total cost he concludes philosophically, "It is expensive to be sick, but I am almost as good as new and it is worth it for I have had the best of care."

Mr. S. has grown to rely on the ministrations of his faithful nurse, but as convalescence progresses both the physician and nurse suggest tactfully that less nursing is required. "Oh, let it go another week," begs the patient remembering how utterly helpless and miser-

able he felt during his recent illness when left alone for a moment. "Some nursing care is still required," says the doctor, "but certainly not more than an hour or two a day. Your nurse tells me she is finding it difficult to keep busy. Let her go and I'll telephone the Hourly Nursing Service to send a nurse to you tomorrow morning at 10 o'clock." At this juncture, Mr. S. reluctantly bows to the inevitable.

"What is this Hourly Nursing Service, doctor?"

"The name is self-explanatory, but what you are interested in knowing is that you will receive skilled nursing care by a graduate nurse for a reasonable charge which you can well afford, at the hour you need her and for as long as you need her. She will follow my instructions, make you comfortable and return every day at the same time. In another week, less frequent visits may be made."

Routine of the Hourly Nurse

The next day on the stroke of 10, the hourly nurse appeared. She began her duties immediately and at the end of an hour was ready to leave. Everything was in order and Mr. S. was as comfortable as ever. On the table by his bed the nurse left a small folder which she asked him to read. She then collected her fee, gave Mr. S. a receipt, took her bag and departed with the understanding that she would return the next day.

Mr. S. settled back on his pillows and picked up the folder entitled "Hourly Nursing Service." This is what he read on the first page:

"Patients under medical supervision may receive nursing care in their homes for an hour or two a day when continuous care is not needed.

"Carefully selected graduate registered nurses are equipped to give any nursing care or treatment ordered by the physician.

"Visits by appointment may be arranged either daily or less frequently, between the hours of 8:30 a. m. and 10 p. m.

"Calls are generally limited to one or two hours. A special relief service may be arranged for three or four hours if necessary.

"The nurse will demonstrate to the family how to care for the patient during her absence."

The second page contained several brief suggestions as to the way the service could be used effectively and the final page gave the names of the various officers of the organization.

The suggestions for the use of the service started a train of thought. "Everybody ought to know about this service. I'm surprised how well it fills the bill as far as I am concerned and there must be literally hundreds of people who do not require any more care than I. Jones ought to know about it. His wife is coming home from the hospital with a new baby in a day or so. I'll ask my wife to give him this telephone number." And so another patient is converted to hourly nursing service and does a little vocal advertising of the best kind.

On her second visit to Mr. S. the nurse is besieged with questions. By the time she is ready to leave, the patient has learned that most of the visits are made in an hour. Occasionally the first visit is longer because, as the nurse explains, she prefers to systematize her work to establish a routine and save time. If everything is ready when she arrives it not only saves time for the nurse but money for the patient. The hour begins when the nurse enters the house and ends when she is ready to leave. No additional charge is made for travel time. The nurse carries her own equipment but does not supply medicines or dressings. She gives no treatment without an order from a physician. If no physician is in attendance she is obliged to dismiss the case after the first visit. She will remain for four hours if engaged for special relief service. This type of service is particularly valuable in order to relieve the twenty-four hour nurse for her time off duty.

These are some of the practical features of the service that appeal to Mr. S. His wife, too, is an ardent enthusiast admiring the systematic way the nurse works, her orderliness, her speed and, perhaps more than anything else, her ability to enter and leave without disturbing the household routine. Moreover, there are no meals to be prepared or sleeping quarters to be provided.

As a matter of practical suggestion to those who have not known about the hourly nursing service, the following list is offered as a means of showing what the nurse can do in an hour. The list is compiled from the medical histories kept by the hourly nurses over a period of six months.

Fifty Orders Carried Out This Year

1. Bathed a patient; gave an enema and a hypodermic.
2. Gave a bath and an alcohol rub to an unconscious patient suffering from stroke.
3. Applied a surgical dressing in a postoperative case.
4. Gave treatment for shock following a patient's return from the hospital after an appendectomy. The nurse stayed until the physician arrived.
5. Bathed and gave an alcohol rub to an old person.
6. Applied hot fomentations to a patient's arm; gave an alcohol rub.
7. Gave a colonic irrigation.
8. Assisted a physician with abdominal tapping.
9. Took care of a psychotic patient with osteomyelitis.
10. Gave a hypodermic for trifacial neuralgia.
11. Bathed and dressed a patient with a fractured right arm.

12. Gave enemas to relieve obstruction of the bowel.
13. Kept a patient comfortable for an hour.
14. Gave an enema and applied turpentine stupes.
15. Transferred a patient from the physician's office to the hospital.
16. Bathed and dressed a patient with fractured ankle.
17. Applied hot applications to the back and gave a bath and an alcohol rub.
18. Bathed and dressed a baby and prepared his food formula.
19. Assisted the special nurse to care for an obese patient.
20. Remained with a patient until the twenty-four hour nurse arrived.
21. Special relief service: Cared for a small boy with mumps while the mother was away for the afternoon.
22. Gave an oil rub.
23. Gave a catheterization.
24. Applied a surgical dressing and gave a hypodermic of insulin.
25. Gave a high enema; applied a pneumonia jacket; gave general pneumonia care.
26. Took care of a patient immediately following a stroke.
27. Gave a bladder irrigation.
28. Advised a mother following her return from the hospital with the baby on the general care of an infant.
29. Bathed a child, 10 years old, threatened with pneumonia; instructed the mother.
30. Cared for a child with measles.
31. Assisted a physician in his office at a tonsil operation.
32. Assisted a physician at a circumcision.
33. Irrigated an ear; gave general care.
34. Gave a hot tub bath and oil rub; general care.
35. Cleansed a wound, applied ointment and dressing in a postoperative case; gave an alcohol rub and general care.
36. Gave general massage.
37. Gave a bladder instillation.
38. Took care of a patient in a brace as a result of an injury to the spine.
39. Took care of a three months old baby; prepared its food.
40. Gave a bath to a patient with arthritis.
41. Gave a shampoo; general care.
42. Gave an epsom salt bath; massage.
43. Instructed a mother in how to feed a baby with a medicine dropper, following an operation for harelip.
44. Gave daily insulin injections.
45. Applied hot packs.
46. Remained with a sick woman between trains.
47. Dressed a patient and got her up in a chair.
48. Remained with the family after a patient had died.
49. Demonstrated the care of bed sores to a member of the family.
50. Gave general care and served the patient her meal.

The question has been raised as to whether or not work is being taken away from the private duty nurse. As a matter of fact, work is being turned her way, for 10 per cent of the unimproved cases are transferred to the care of private duty nurses. Too, the private duty nurse occasionally takes an hourly-nursing case while waiting for a full-time case. Hourly nursing is not infringing on the work of the Visiting Nurse Association, because it is definitely an appointment service for which people are willing to pay more than the usual charge made by the visiting nurse. Hourly nursing service is frequently administered by visiting nurses associations, but if not, there is the closest kind of cooperation between the two agencies.

Nurses themselves have been responsible for this movement because it seems to offer one solution to the problem of how to reduce the cost of illness, a subject that is engaging the minds of both the medical and nursing professions. Hourly nursing service is indorsed by the American Nurses' Association, the national body of nurses. Physicians are giving their hearty cooperation to furthering this project and the patients themselves not only call again and again, but they refer others.

Just as a well equipped apartment now answers the need of the small family, formerly demanding a private dwelling, so hourly nursing service of exceptional quality, but in smaller quantity, is supplementing or complementing nursing service by the day when a patient can be adequately cared for in an hour or two.

Hospital

HOW MICHIGAN FEEDS THE HEALTHY CURIOSITY OF ITS SICK YOUNGSTERS

"LIFE is not worth while. Everything is so ugly and all people lie." That statement was not made in so many words by Schopenhauer or Nietzsche. It was not made by an old man, worn and tired from a life of struggle. It was said with tragic sincerity one day by a boy in the University of Michigan Hospital at Ann Arbor. That boy was 12 years old. He was hardly on the threshold of life, yet he suffered physically from tuberculosis of the hip and, from what was more tragic, a mental attitude that had warped his whole outlook until everything was ugly and life was no longer worth while.

It was the duty of the surgeons and the physicians to treat the hip—a difficult task and one that took several years to accomplish. To the social service division of the hospital under the direction of Miss Dorothy Ketcham and to the school of special education under the supervision of Mrs. Collerohe T. Krassovsky fell the work of changing a fixed mental attitude that had grown more deeply imbedded as this boy had grown older. Yet when the time came for him to leave the hospital, the case report of this problem child changed from a tone of futility to read, "He is happy, cheerful, works very hard and has a hundred ideas about what he wants to do. This change is also evident in his school work. His teacher reported the other day, 'He has made up his mind to work, and he does.' His whole behavior and attitude are changed. He is a happy child." In that transformation is involved the story of a new project in the humanization of child education in hospitals, now in the process of development at Ann Arbor.

High up on the roof of the University Hospital, above the noise and dirt of the streets, up where there is plenty of fresh air and all the sunshine that is necessary to restore health to feeble young bodies is Ann Arbor's playground of the air, one of the three recreational centers operated by the social service and special education departments.

Surrounded on all sides by walls sufficiently high to withstand the attempts of the curious, the playground is all that any child could wish. Here he works and plays; the work is itself a variety of play, subject to the child's own desires and interests. On the walls, created in paint, familiar and welcome to childish eyes, live the characters and scenes from many a story book. For those able to move about, there is a pond where boats made in the workshop can be sailed. For the less fortunate, unable to leave their beds, there is also a wide variety of diversions. Special types of games are played should they desire amusement, but even amusement becomes tiresome, and a creative work that allows individual expression is encouraged, not demanded, under liberal teaching.

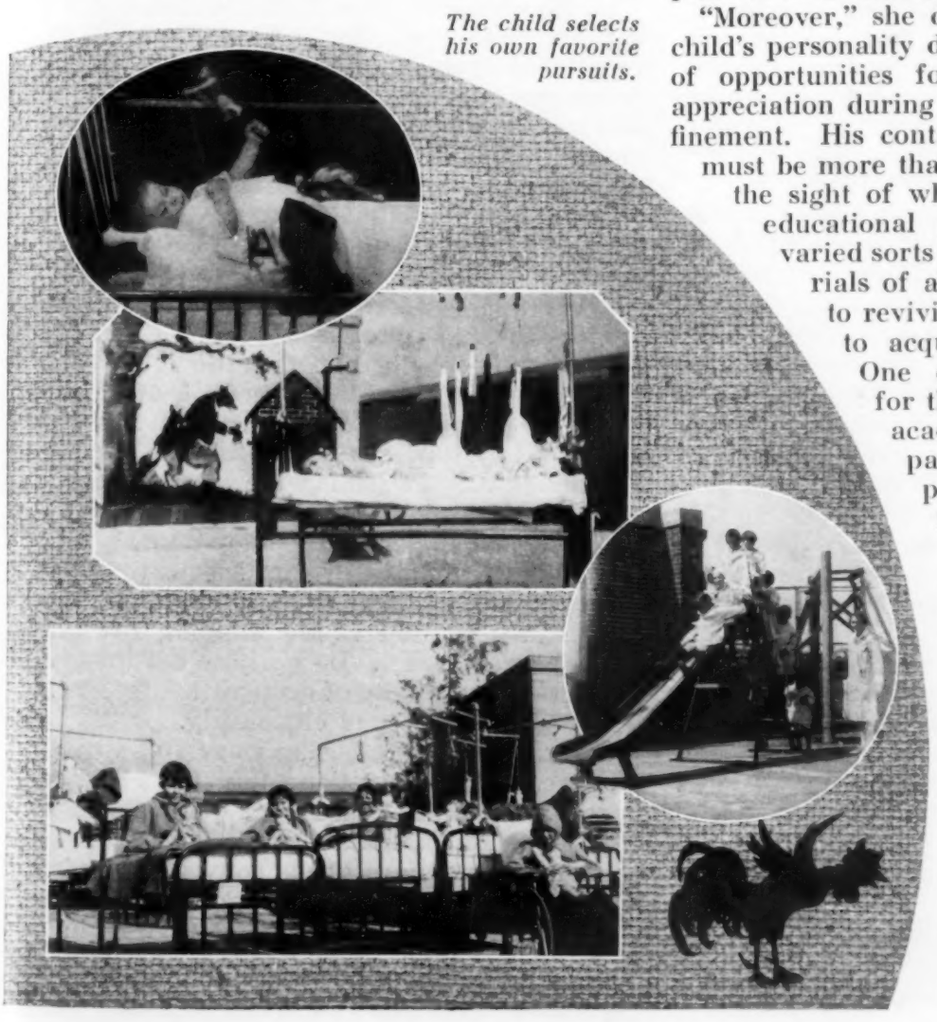
Work rooms and play rooms on the roof.

Children

By

Frank T. Cameron

Sewing machines, a printing press and looms, all portable, are at the disposal of those unable to leave their beds. Gardening also is a popular occupation. Under the guidance of teachers, the children plant the seeds, tend them carefully during growth and with all the pleasure of something achieved enjoy the blooming flowers or full-grown vegetables.



The child selects his own favorite pursuits.

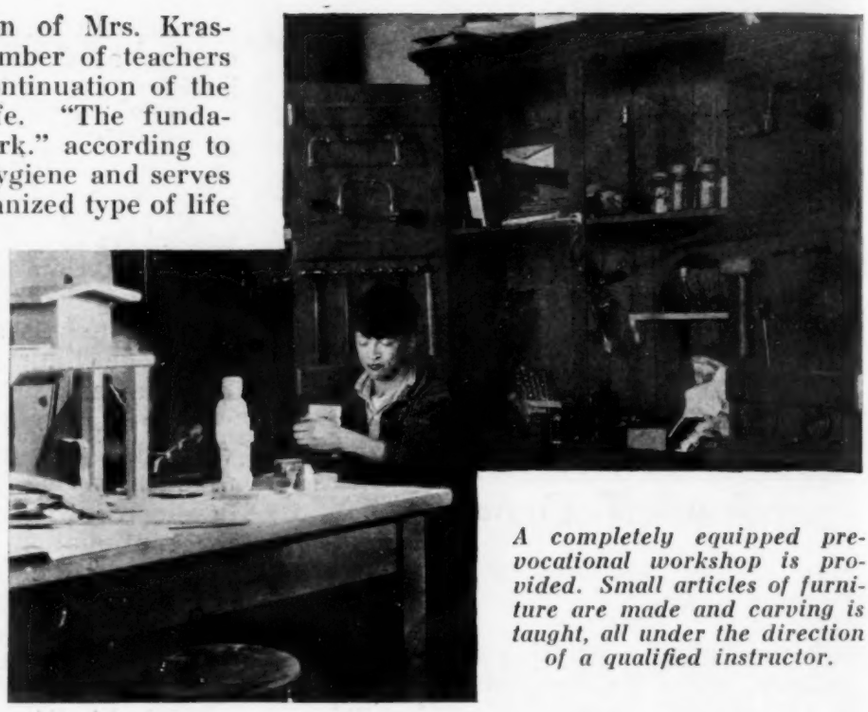
Combined with the other two recreational centers at Convalescent Hospital and South Division, the social service department carries out a project in education for hospitalized children that is unexcelled by any other hospital in the country for either facilities, scope of work or practical results. And underlying the whole project are sociologic and psychologic principles that recognize and supply the needs of children in varying degrees of ill health removed from old adjustments and placed in new surroundings. The children are provided with both medical care and schooling.

"One must realize," states Miss Ketcham, "that when children are hospitalized for any length of time the period is one of arrested educational development unless proper care is given. It is the continuation of this normal development that the child education work of the hospital is attempting to supply. When the child is brought here, usually from some other part of the state, he is torn suddenly from an old environment. New adjustments are necessary, and as far as possible his life must go on in much the same manner as it did before by continuing his education and by developing his special interests. Unless this happens the child is returned to his home with a gap existing between his old companions and himself."

"Moreover," she declares, "the health of the child's personality depends on the continuation of opportunities for his self-expression and appreciation during the period of hospital confinement. His contact with the outside world must be more than the feel of bed linen and the sight of white walls about him. Our educational program offers the most varied sorts of sense stimulation. Materials of all kinds are at his disposal to revivify his past experiences and to acquaint him with the new."

One department of the school for these children is of a purely academic nature. Ten full and part-time teachers are employed and the work conforms to that given in the regular elementary and grade schools of the state. Standard programs are followed and close contact is kept with teachers formerly instructing the children in the localities from which they came so that when the child is discharged from the hospital he returns to his home ready to reenter school on the same level as his former classmates. The other department of the school, that of special

education under the direction of Mrs. Krassovsky, employs the same number of teachers and has as its purpose the continuation of the normal activities of child life. "The fundamental motive behind the work," according to Mrs. Krassovsky, "is mental hygiene and serves to counterbalance the overorganized type of life usually led in an institution. In his normal surroundings, the life of the child is adjusted to three different sets of conditions: the home, giving him food, clothing and shelter; the school, giving him instruction and a certain background and, finally, the child's normal activities outside of these other two, the thousand-odd things he does during the day that are most important to his healthy development."



A completely equipped prevocational workshop is provided. Small articles of furniture are made and carving is taught, all under the direction of a qualified instructor.

This work is not always complete ordinarily, Mrs. Krassovsky points out. Hospitals take care of the abnormal side of a case, the physical disabilities or educational gaps, and supply the first two environmental spheres as matters of routine, but it is in carrying out the normal development, in furnishing the insignificant activities so important to the child's life, that special education functions. It feeds the healthy curiosity of the childish mind with new and invigorating experiences.

Karl Finds New Interests in Work

In the records kept of the children as they come and leave the hospital are told many stories. Not infrequently there is tragedy. Often the child has entered with a warped personality, the result of his former environment. Mrs. Krassovsky points out the case report of Karl, 14, as a type whose backward tendencies had imbued in him a sense of inferiority.

"When Karl came into the shop, he couldn't use an ordinary foot ruler and he had to be told the division in inches and half-inches. He told us that he hated work and when asked what he was going to do later in life, he answered, 'I am going to be a bum, they say, because I don't like to work, and we haven't enough money to send me to school.' Karl has been encouraged and has worked in the shop for two months. He made fourteen articles and when discharged, he asked for a piece of lumber to take home to make a shelf for his mother. Later news obtained from a neighbor who came to the hospital was that Karl now works industriously all day around the house and yard and apparently enjoys it."

The keynote of the teaching system is freedom. Scarcely ever is the word "teacher" applied by the children to those in charge. All suggestions as to the type of training he wishes to pursue come from the child himself. When his aptitudes are discovered, he is placed with children of similar interests and is taught to cooperate with the group.

In this section of the school, four lines of training are followed: the arts and crafts, prevocational training, special work in physical development and recreational work. In the arts and crafts, the projects are carried on in units and the unity of instruction is emphasized. If, for example, the academic side of the child's education is at that moment stressing the geography of Holland, he, with his companions, may construct a complete Dutch village out of paper, cardboard and clay, and for the moment all his interests become correlated. Similarly, Iceland may inspire him to build igloos or his history lesson suggest a portrait of Lincoln. Even the seasons present a theme for group work. At Thanksgiving, for instance, any topic involving the Pilgrims, the Mayflower, the Indians or whatever suggests the spirit of the occasion are eligible lines of pursuit.

In 1929, a series of Indian designs printed on a single piece of cloth giving a tapestried effect was highly praised at the London exhibition where it was shown. In working out the group projects, the necessity of cooperation fosters and instils the principles of citizenship.

Tapestry weaving, basket weaving and painting are other occupations that the child may pursue. Nor is the sphere of domestic science neglected. Implements ranging from flatirons to vacuum cleaners are at the convenience of any who are interested.

Prevocational work is taught mainly in the workshops, one of which, supported by Galens, honorary medical society, is completely equipped

for all the child's needs in woodwork and is supervised by a part-time instructor. All sorts of woodwork, carving and small articles of furniture are manufactured there.

For children whose bodily members function imperfectly, a system of special case work is employed. All games and occupations that stimulate correct development of the injured member are fostered so that the disability of the child is often corrected while he unconsciously facilitates the process.

The recreational work sponsored and financed by the Ann Arbor Kiwanis Club is under the supervision of two specially trained full-time workers. Organized trips and excursions are taken, as often as possible at the suggestions of the children themselves. Museums, libraries, city halls, factories, arboretums—any place of possible interest to the child—are included. These trips are in turn correlated with his other work. On the return from a visit to the fire station, for example, most of the children are stimulated by what they have seen to draw or construct fire engines, or are encouraged to play with what toy fire equipment they already have. In like manner, in their academic work, the objects they have seen invite descriptive essays. All the toys, drawings or things done in the way of creative work that the children do not wish to keep for themselves are sent to their homes for appreciation.

Group activities also include dances, playlets and choral singing. In these too, the children are allowed to do as much of the organizing and directing as they are able, under the guidance of those in charge. The Christmas programs are presented in this manner as well as the May festivities. Many of the children keep pets, the most popular of which are canaries and rabbits. Children are also allowed as part of their recreational development to attend the movies given at frequent intervals in the hospitals. The program usually consists of an educational film and a comedy.

Child education work at the hospital, owing largely to the efforts of Miss Ketcham, has developed during the last ten years, attaining about three years ago the approximate state of efficiency that characterizes it today. Influential also in its development have been the King's Daughters who at present support one full-time teacher. Since over a fourth of the patients at the hospital are children, the project is deemed by sociologists and psychiatrists to be of considerable social significance for, besides the promotion of physical health, it aims to develop the social and psychologic self into a healthful personality.

The Child's Sleeping Habits

SLEEP and relaxation alone have the power of removing physical and mental strain. Although present knowledge of what actually constitutes sleep is negligible, it is nevertheless a natural rhythm of life, associated with the movements of the planet on which we live. It is the relaxation of the mind from its interests and of the muscles from activity.

A report of the White House Conference on Child Health and Protection proposes the following schedule for sleeping hours of children:

Ages of children	*Total Hours of Sleep*
To the end of the first year	14-16
At 2 and 3 years	13-14
From 4 to 7 or 8 years	12-13
From 9 to 10 years	11½
At 11 years	11
At 12 years	10½
At 13 years	10
From 14 to 15 years	9½
At 16 years	9

The amount of sleep depends somewhat on the child. A good test of sufficient sleep is the question, "Does the child awaken by himself in the morning refreshed and ready for a new day?" Lack of sleep may not show immediate effects, so the present health of the child may not be an indication of insufficient sleep.

Good sleeping habits should be stimulated when the child is still a baby. He should be put to bed alone, in a comfortable bed, neither too hard nor too soft. The clothing must be light and loose. Even napping in the daytime should require a change of clothing to more comfortable and less binding garments. Extreme heat or cold, a stomach distended with gas or food, tight clothing or bodily discomfort of any kind will be a stimulant to keep the child awake.

Noise, light, conversation and music that may not annoy the adult may be violent disturbances for the child who is learning sleeping habits. Going to bed should never be a punishment. Adult conversation containing gruesome details should not be indulged in before the children, particularly at night, nor should too active play precede the bed-time hour, the report suggests.

Failure to perform mental work with accuracy and normal speed is often observed in children who are constantly deprived of what seems to be their usual amount of sleep. The irritability of children when they are sleepy and the findings from experiments lead one to infer that physiologic changes are induced by loss of sleep.

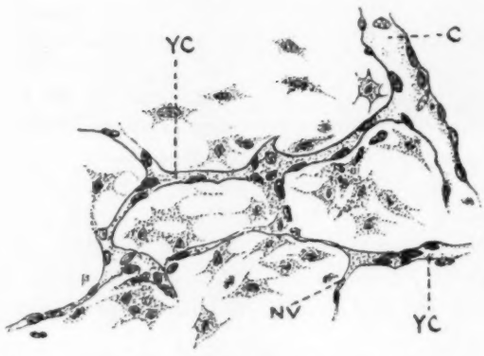
Our Great "Common Carrier"

HOW THE BLOOD HELPS US TO KEEP OUR HEALTH AND TO FIGHT DISEASE

By Robert A. Kilduffe

TO assign to any one organ or function of the body an exact measure of relative importance in the maintenance of functional efficiency is a matter of some difficulty because of the interlocking interdependence of all the bodily mechanisms.

Because of its rôle as the great common carrier in the human system, the blood occupies an important place in the human economy. To every corner it must be distributed and with every cell it must establish a more or less direct contact.



Developing blood vessels; C, large capillary; YC, young capillary; NV, new vessels developing. (Piersol.)

The efficient distribution of the blood stream involves an extensive and interesting system beginning with the heart, which is, in effect, a muscular pump.

The first great impulse imparted to the blood sends it rushing out of the heart into the great vessel, the aorta, which is the beginning of the arterial tree, a tumultuous torrent bound for the outermost limits of the body. Before each surging impact of the blood column, the elastic walls of the vessels expand to contract again behind the blood and thus squeeze it still further onward.

At varying intervals along the arterial channel, branches are given off, each a little smaller and each diverting its quota, until finally the arterioles and the capillary vessels are reached —the end of the line.

The blood which has left the heart as a turbulent torrent laden with oxygen and with the great variety of substances demanded by the vital activities of the body cells has now become a small, thin trickle in the capillaries.

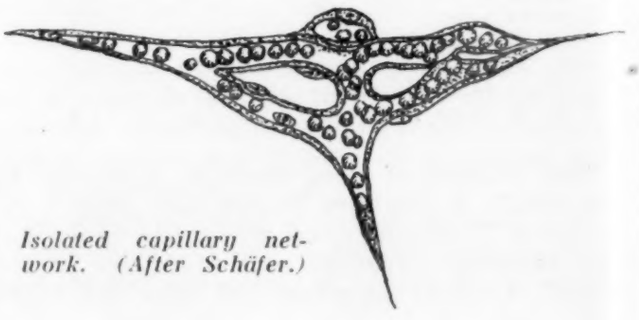
Carried along in the mad rush of the current, the multitudes of red blood cells that have been flung into all the hidden recesses of the body have carried to the busy tissue cells their burden of food and oxygen and have discharged their cargo and received in return carbon dioxide as the exhalation of the internal cellular respiration. The blood stream gathering in the waste products of the body for disposal wanders through the tiny venules toward the heart.

This crawling stream, urged on partly by the weight of the blood column behind it and partly by the squeezing pressure on the veins by the surrounding muscles, gradually empties into larger and larger vessels until a steadily progressing river of venous blood, dark because of its lack of oxygen, pours into the right upper chamber of the heart, the auricle.

Before it can be returned to the general circulation it must discharge its load of waste gases and replace them with a fresh charge of oxygen, so that the pathway now followed by the blood leads to the lungs.

In the lungs the blood is distributed into an extensive capillary network that closely covers the multitude of tiny air sacs of which the lung is composed. Here the carbon dioxide is replaced by oxygen, and the blood is returned to the heart, once more to begin its long journey.

This is an intricate and complicated process and yet so efficient is the normal circulatory system that this whole cycle of events for a

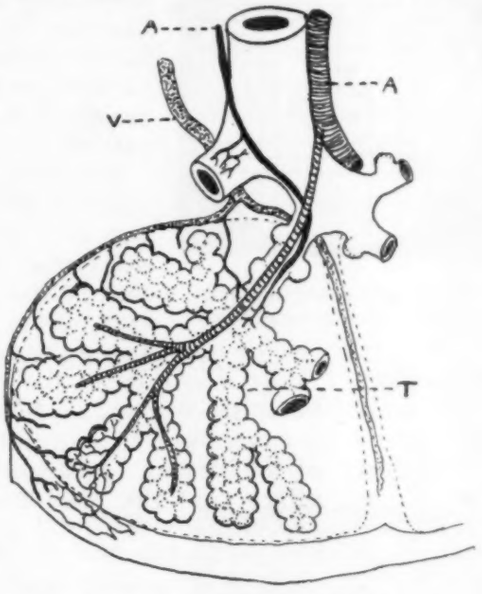


Isolated capillary network. (After Schäfer.)

given volume of blood is completed in approximately twenty seconds.

Because of the intimate relation of the blood to the body tissues in general, it is easy to see that it not only bears a close relationship to disease in general but also serves as a delicate indicator of functional failure throughout the body.

If the kidneys, for example, fail to carry on properly their business as excretory organs the immediate result is an accumulation of certain waste products in the blood. If the other available avenues cannot take over the burden satisfactorily, the concentration of these substances in the blood soon reaches significant proportions. As they are distributed throughout the body by the blood, various other tissues may suffer from the toxic irritation thus induced and various other functions may begin to show imperfections.



Lobule of lung showing blood vessels and terminal branches of an air tube; A, artery; V, vein; T, air tube. (After Bremer.)

It is possible, therefore, to detect the signs of failing kidney function and often to measure its degree by estimating the kind and amount of waste products retained in the blood.

Again, the diagnosis and, to a large extent, the control of diabetes depends on examinations of the blood, for the essential feature of diabetes is not the presence of sugar in the urine but the accumulation of sugar in the blood in amounts exceeding the normal limits.

Sugar—dextrose—is an essential feature of metabolism because it furnishes, when burned, an important source of energy. The blood, therefore, always contains a small quantity of sugar that is being carried to the tissues for use or storage. However, when, because of functional inefficiency in the pancreas—the organ most intimately concerned in the utilization of sugar—there is a failure to use up the sugar, the amounts of sugar in the blood increase in proportion to the degree to which the pancreas is inefficient. Determinations of the blood sugar, therefore, are essential in the proper management of this disease.

In its function as a common carrier, then, the blood quickly and often definitely reflects disturbances of function throughout the body. In the same way, any disturbance of the function of the blood as a general distributor, if at all pronounced or long maintained, soon leads to trouble in the body in general. For without an efficient circulation there can be neither an efficient distribution of food, warmth and fluid nor an efficient disposal of waste. Either or both may be potent factors in the production of disease.

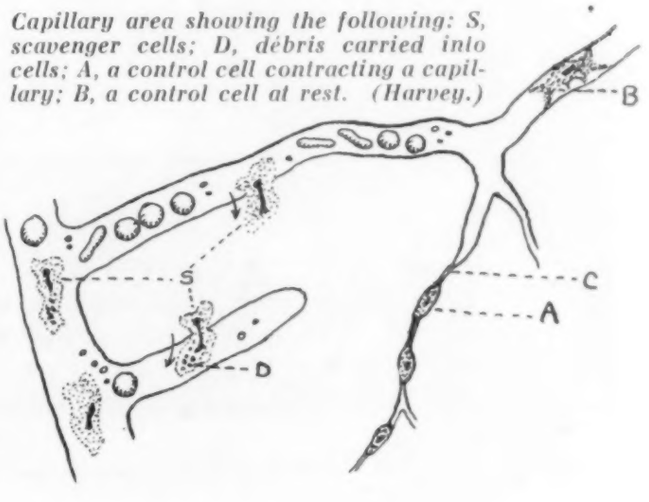
Because of the specific properties of the leukocytes, or white blood cells, certain examinations of the blood are often of value in establishing the presence of infection, at times even suggesting its possible nature. Examinations also serve in a measure to indicate the patient's ability to resist infection.

Alone of all the formed elements in the blood, the white blood cells possess the ability to exercise independent motion; still more important, they possess the ability to engulf or swallow foreign material, such as dead cells or bacteria, which they then digest. For this reason they are sometimes spoken of as the scavengers of the body or, to use another figure of speech, the shock troops that are called on to repel the attacks of bacteria or other agents capable of producing tissue damage.

The important part played by the blood as a whole, as well as the special function of the leukocytes, is vividly illustrated by the phenomena of inflammation, the fundamental principles underlying the reaction of the body to irritating stimuli.

The first evidence of the reaction of the tissues to irritation or injury is indicated by increased activity in the circulation of the part. The capillaries in the area suddenly become distended with blood flowing more rapidly than normal. Soon, however, the velocity of the blood stream decreases so that the vessels are distended with blood, which soon shows a definite arrangement within the vessel. The red blood cells are massed in the center of the

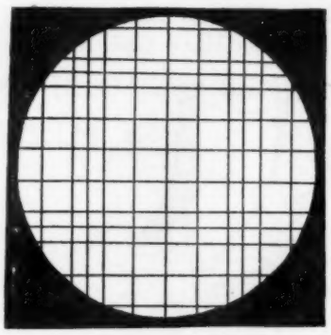
Capillary area showing the following: S, scavenger cells; D, débris carried into cells; A, a control cell contracting a capillary; B, a control cell at rest. (Harvey.)



stream, while the leukocytes cluster thickly along the vessel walls.

Practically at the same time, the fluid portion of the blood leaks through the vessel walls into the surrounding tissue to dilute the irritant agent, if this is possible, and thus to weaken the force of its action on the tissues.

A striking phenomenon now becomes evident. The leukocytes, which have been gathering in increasing hordes along the vessel wall, now begin to penetrate its interstices, to worm their way out of the vessel and to wander into the surrounding tissue. If bacteria, dead cells and other débris that demand removal are encountered, they are engulfed and digested by the leukocytes, which thus fulfil their functions as scavengers and as shock troops to repel assault.



Blood cell counting field under the microscope.

This mobilization of leukocytes takes place not only through the concentration of those already and normally present in the blood stream but through an augmentation in number by new leukocytes called forth from the depots in which they are stored or manufactured. It follows, then, that when there is an inflammatory process in the body in which tissue is being or has been subjected to injury not only are increased numbers of leukocytes mustered in that area but the blood stream in general is more or less crowded with mobilizing leukocytes hurrying to the scene of the conflict.

It is thus often possible, by determining the number of leukocytes in the circulating blood, not only to detect the fact that trouble exists somewhere but also to draw from the total number of leukocytes present some inference as to the vigor with which the defensive battle is being waged. Also from the kind of leukocytes that predominate, it is possible to draw some inference as to the nature of the disorder.

This is the reason for the blood counts that are ordered by the physician in the initial study of many diseases. Their repetition throughout the course of the disease often enables the doctor to gain information as to how the battle is going: whether the patient is making a good fight or whether his resistance is weakening or is showing signs of being overwhelmed by the disease.

From what has already been said, it is apparent that the reaction of the leukocytes to disease is, to a great extent, independent of the kind of disease. There are, nevertheless, some diseases almost invariably accompanied by a great increase in the number of white blood cells (leukocytosis), by a lack of increase or even by a decrease of white blood cells (leukopenia).

However, the white blood cell count to determine their total number and the differential count to determine the percentage proportion of the various types of leukocytes often convey information of value and significance.

For example, in the case of infestation with parasitic worms, such as tapeworms or hookworms, there is a stimulation in the production of leukocytes. Strangely enough, this increase affects not the total number of leukocytes in general but the total number of a particular type of leukocyte—the eosinophil; therefore the finding of a well marked eosinophilic leukocytosis renders the diagnosis of parasitic infestation extremely probable.

On the other hand certain diseases, such as influenza, apparently strike a telling blow at the defensive mechanism, and especially that portion concerned with the production and mobilization of leukocytes, for they are characterized by a leukopenia, a decrease in the total number of leukocytes in the circulating blood.

From this outline some idea may be had of the importance of the blood both in the maintenance of health and in the reaction to disease.

It is, of course, obvious, that the efficiency with which the blood can perform its varied functions is directly and vitally influenced by the efficiency with which it is distributed throughout the body; some discussion of this mechanism will form the next subject in this series.

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AN INDEX and title page for the 1931 volume of HYGEIA *is on the press and will be sent to any subscriber on request. Address The Editor,* HYGEIA, *535 North Dearborn Street, Chicago.*

The Secret of a Pleasing Voice

By

HELEN BETHANY HAMILTON

VOICE is the means by which we speak our mind. But if that is all, how did the ancient priestess control her tribe with the unintelligible words of her prayers; why did the speech of Mark Antony move the Roman multitude to vengeance when his written words almost never fail to bore; why do the most carefully chosen words often fail to convince? Is it not because the voice portrays the complete mental and emotional attitudes of the speaker better than the words it speaks. The voice is certainly something more than a means of communication; it is an audible expression and faithful picture of the spiritual entity of the person.

We contemplate with wonder the audiences, snickering at the sight of Lincoln's gaunt frame in homespun, that were instantly silenced by the magic of his voice. But how often do we apply this lesson to our own lives and realize that our voices are having an equally great influence for good or bad on those around us?

Do parents ever stop to consider how much influence their speaking voice has on the child? The voice tells a child more than any other expression. Long before he can understand the language, he knows what the emotion back of the words is saying. Voice is the medium by which we express mood, character, education and state of health.

Doris E. Wright

If you want little Jane to grow up to be attractive, start at once to cultivate in her a pleasing voice.

One of the child's most important needs is security. Love well expressed will supply this. The mother who has the tiny child in her arms, speaking gently and softly to it, offers the child his first sense of security. Think what the lover accomplishes with his cajoling, sweet tones so soft and purring. Before the courtship is over his lady love is so sure of him that she will gladly cast her lot with his and risk any dangers that may face them. As a contrasting example there is John, a preschool child, pitifully underweight and excitable. He seldom finishes a task, is inattentive and cries hysterically when his mother leaves him with others. A study of the home situation explains this conduct. His father finds it a real hardship to be held down by marital responsibilities and economic worries. He shows all this in his voice. He screams at the child to wash his hands, bellows at him to eat his food, rails at him to get

off to bed. Each time the father speaks the child shudders. This poor little 4 year old is getting a bad start.

The person who gets the best cooperation from a child is the one who speaks with a clear, well modulated voice. This does not mean that the pleasant voice lacks force, for in it can be the qualities of determination and earnestness. The parent must show the child respect in order to gain respect. This delightful relationship is lost if the parent commands the child in a shrill, angry voice. The child may obey at once through fear but who can be proud of ruling a child through fear?

Another common reaction to this shrill voice is inattention. The child may be so distracted by the tone that the words become inconsequential and he builds up a defense reaction by ignoring both the speech and the speaker. If the mother who finds she must yell at the child would make an effort to do it only occasionally, she would be surprised to find how much more effective she becomes. To speak less and more carefully is always a good rule.

The person whose voice possesses a grating quality is unfortunate to a pitiful degree. It is not at all uncommon that this is the very person who has an important message, but we either do not wait to hear what he has to say or, if we do, we are so engrossed with that awful sound that we do not hear more than a sentence or two. What an act of benevolence it would be should some one tell the speaker that he is ineffective because of his voice.

Voice Can Be Changed

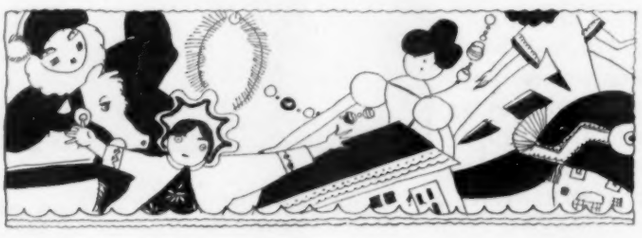
The voice is not unalterable as is the color of our eyes or the shape of our ears. It can be changed. The original quality will more than likely remain, but the method of using it can be improved. True, we cannot all speak as artists but we can make phenomenal strides toward betterment. How is this to be accomplished? The development should come through natural methods, persistently and intelligently pursued. The best health should be maintained. Anything that affects the general constitution affects the voice. Good posture is an asset. This fact should be impressed on children when they are toddlers. By standing correctly one breathes correctly and the chest develops properly. Normal breathing gives life to the tone. Relax; tightening and stiffening of the throat, vocal cords and jaws make pleasing speech impossible. Keep the nasal passages clear and open to afford resonance. Enunciate distinctly.

The secret of a pleasing voice lies in proper training during the preschool period. Nothing is more important than a good example and care in developing in the runabout child a pleasant voice. But there is something more in developing the child's speech. It is necessary for the adult to be a good listener. The belief that children should be seen and not heard is as out of date as the one-horse shay. How can they become good talkers if they have no practice? To be congenial adults they must have an opportunity to be good companions all along the road to adulthood. When Tommy comes to relate the glowing details of playtime to the mother, who he hopes will think it thrilling too, he is certain to express his disappointment in his reaction if she starts to walk toward the basement or upstairs before the first sentence is over. He may stop telling what he has to say, thinking it is not worth while and thereby reap for himself a sense of inferiority. What is more likely to happen is that he will begin to talk faster and louder and fairly scream in order to get out the last detail before the mother is out of sight and hearing. If this occurs often, an undesirable habit of speech is established.

A Good Example in the Home

One of the most important adjustments that the child has to make is in his social contacts. What can be more essential than a pleasing voice to which it is delightful to listen? Parents want their children to have this. They want little Jane to grow to be attractive. They visualize her as a young woman holding the attention of many as she tells about her activities. The pleasant voice has charm, animation and variety. How does this come about? A good example in the home and an opportunity to cultivate the desired qualities in a gradual manner are responsible. Parents certainly do not want their daughter to be the young woman who is good to look on but who repulses one the minute she begins to speak.

Many persons do not realize the wear and tear on the nervous system that is wrought by bad voices. Are we going to continue in this slip-shod manner, allowing ourselves to become tone deaf, thereby cheating ourselves of the enjoyment of the most beautiful music in the world, the human voice, or are we going to cultivate that which we are on the verge of losing?



"We must get into the very soul of a louse, a flea or a mosquito," said Leishman, "if we are to wrest from it such secrets as we may hope to utilize."

Pioneers of Medicine

Sir William Boog Leishman

By

Claude Lillingston

IF SCOTCHMEN are prodigal in any direction, it must be in giving to the world, during the last two or three generations, scores of men who have distinguished themselves in medical research. The student of the modern history of medicine finds there is no getting away from them. They are modestly ubiquitous. One of the greatest is Sir William Leishman.

The only son of a doctor and professor of midwifery in Glasgow, Leishman was born on Nov. 6, 1865. He was only 21 when he was graduated in medicine and surgery. The following year he joined the army, in the service of which he was to remain for the rest of his life. On his first visit to India he took a microscope with him. That addition to his baggage at the present time would not excite comment. But, according to one of his biographers, Leishman was one of the few officers in the Royal Army Medical Corps at that period, the late 'eighties, who thus encumbered himself. This "encumbrance" was to be his companion ever after and even when he was appointed to the highest administrative post in the Royal Army Medical Corps late in life, he was always hankering for it and harking back to it.

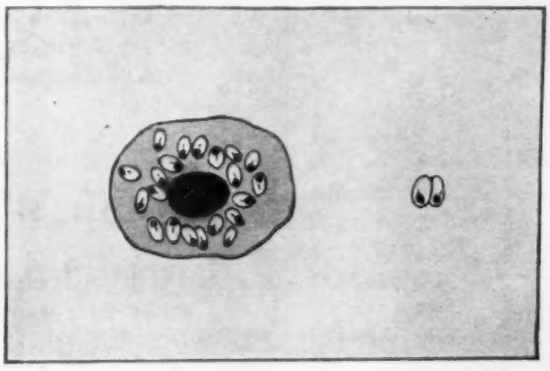
This man who encumbered himself with a microscope on his travels, as other men provide themselves with a razor, gradually came to be recognized as an authority on pathology and bacteriology. In 1899, he was appointed as assistant professor of pathology in the Army Medical School at Netley in England. Here he came under the inspiring influence of Sir Almroth Wright, whose discovery of a method of preparing a vaccine from typhoid bacilli was greatly to reduce the mortality from typhoid fever during the Boer War, which broke out in this year.

Inoculation against typhoid fever was, however, still in its infancy and Leishman threw himself heart and soul into improving its technic. The incidence of typhoid fever had indeed been greatly reduced by inoculation during the Boer War, the ravages of this disease being much less among the inoculated soldiers than among those who, not having been inoculated, served as controls.

Between the Boer War and the Great War, such enormous strides were made in the perfecting of typhoid inoculation that during the years from 1914 to 1918 there were only 1,191 deaths from typhoid fever among the British troops in all the theaters of operation. Had the death rate from typhoid fever during the World War been as high as it was in the Boer War, there would have been 77,000 deaths from this disease among the British troops in the World

War. When it broke out, Leishman had a difficult problem to solve.

It had been found desirable in practice to give preventive injections of typhoid vaccine on two occasions, with an interval of some days between them. Under the leisurely conditions of peace, such a procedure was perfectly satisfactory; the soldiers who reacted with fever after the first or second injection could fall out by thousands if need be. But in August, 1914, every day and every soldier counted. Was the dispatch of the first divisions to France to be delayed in order that all the troops might have safely got over the effects of two injections and have acquired an immunity to an infection that might not break out, perhaps, until after the most decisive battle in history had already been fought? It was urged that the ultimate good that even a single injection might do would be outweighed by its temporary ill effect on soldiers who were expected to fight, march and fight again for days on end. Leishman had his way to a certain point. He had to dispense with the second injection. With a single injection of a thousand million dead typhoid germs per man, the British Expeditionary Force was launched. Later, the practice of giving two injections was resumed.



A mononuclear leukocyte containing several of the bodies discovered by Leishman. At the right, one such body is dividing in two.

This achievement at the outbreak of the World War was the fruit of some ten years' patient work from 1900 on, perhaps the most important period in Leishman's life, although later years were to bring him more dramatic successes and greater fame. During these ten years he worked out a series of experiments on groups of men who were given different doses of typhoid vaccine. Their responses to this treatment were measured in a search for the most suitable dosage, which was found to be a thousand million for the first injection. In the Boer War, the most suitable dosage of typhoid vaccine had not yet been discovered, and the heroic doses given were such as to provoke reactions so severe that unkind critics suggested that the disease was infinitely preferable to the vaccination against it.

Leishman's Second Notable Discovery

This man with the awkward habit of traveling with a microscope in his kit bag was to discover the germ responsible for one of the most deadly diseases in the tropics. The terms kala-azar, black fever, tropical febrile splenomegaly and dum-dum fever are given to the same disease, which ultimately proves fatal, according to one authority, in 96 per cent of all cases. Without warning, the patient suddenly becomes feverish. The fever lasts for two or three weeks and is not influenced by quinine. There follows a period of apparent recovery without fever. Then the temperature rises again suddenly, and so the case goes on with alternating bouts of fever and normal temperatures. The spleen and liver become enlarged and the patient is profoundly anemic and emaciated.

It was practically certain that this was a parasitic disease, but what was the parasite and where was it to be found? In 1900 a soldier who had contracted this disease abroad died of it in a hospital in England. Leishman examined microscopic preparations from the spleen and showed them to Sir Almroth Wright. They saw that the whole field of the microscope was thickly sown with the small oval bodies that are now known as leishmania parasites. Leishman, who was a clever artist, sketched these bodies at once, but it was not till some time later that the true significance of his discovery dawned on him when he observed bodies similar to those he had sketched in 1900 while studying a case of trypanosomiasis in a laboratory rat.

Parasite Bears Leishman's Name

Leishman's publication of this discovery in May, 1903, was soon confirmed by other workers. Sir Ronald Ross suggested that these kala-azar bodies should bear Leishman's name, although they had been seen but not identified by earlier workers. Later, the term leishmaniasis was applied to the group of diseases associated with the presence in the body of the genus Leishmania. This group has since become much expanded, similar bodies being found in the sores of patients in South America, Central Africa, Northern China and the Mediterranean area. This group of diseases is, therefore, most widespread and has great economic importance.

The stain with which Leishman ran this parasite to earth was evolved after many months of patient investigation and it now bears his name. Previously a cumbrous method of staining with solutions of methylene blue and eosin had been in vogue. Leishman mixed these two dyes together, filtering off the precipitate and dissolving it in methyl alcohol. One of his colleagues has described Leishman's stain as being "as great an advance on previous methods of staining as the breech-loading gun was an advance on the muzzle loader."

Leishman's third notable piece of research was in connection with the life cycle of a spirochete in the African tick which was suspected of conveying a relapsing fever to human beings. He studied the changes undergone by the spirochetes in the tick's body and he showed that clumps of granules in various parts of the tick's body were the source from which young spirochetes developed. Though this work was interrupted by the World War, he returned to it after the cessation of hostilities.

Showed Administrative Ability

In 1923, the post of director general of Army Medical Services fell vacant and Leishman's qualifications for filling it were keenly discussed. He had hitherto held no important command or administrative appointment in the Royal Army Medical Corps and it was argued that however brilliant he might be as a musician, artist, lecturer and above all as a nimble-fingered laboratory technician and research worker, these gifts were no guide to his fitness for the highest administrative post in the Army Medical Service. Why hammer this square peg into what might prove to be a hard-edged round hole? Were there not plenty of other candidates who had steadily moved from one administrative billet to another and who had been reared in the filling and circulating of forms in the most correct atmosphere of the British War Office?

Those who had to make this momentous decision took their courage in both hands and gave the appointment to Leishman. He held it with marked distinction, showing a marvellous grasp of the minor details as well as of the main principles of his work. He strove to put every proved advance in medicine at the service of the army, and he always took a human view of the soldier himself. No administrative problem, however irksome, was shirked and he transacted his business with quiet efficiency. He bore his honors without a trace of mannerism and was at once the simplest of men and the most competent of officials. As far as possible he effaced himself. His personal kindness and generosity to his fellow workers were unfailing.

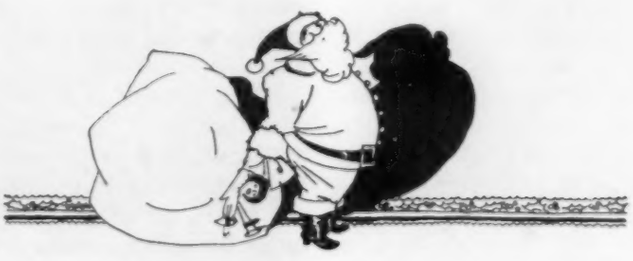
It does not follow that because Leishman proved such a success as an administrator in high office that he was entirely happy there. This explorer in the unknown realms of tropical medicine, this delicate fingered, nimble witted laboratory worker, whose masterly technic was at once the admiration and the despair of his assistants and colleagues, must often have felt a prisoner in the chair of an administrator. His heart and brain remained in the tropics, and as late as 1925 he lectured at St. John's College, Cambridge, on "Health in the Tropics, the Present and the Future."

In this lecture Leishman contrasted the present lot of the white man with that of the native. As for the former, he can "now count on a healthy life in most of our tropical possessions." But the case of the 300,000,000 natives in the British Empire is very different. "To put it shortly, the native, from the health point of view, is in many countries little, if at all, better off than he was before we accumulated the mass of knowledge from which the white man has benefited and is benefiting so greatly." Leishman found that what hinders progress is, among other things, the vastness of the areas concerned. While the sanitation of a prosperous tropical township is feasible, who is going to exterminate the mosquitoes over hundreds of square miles of tropical jungle and swamp?

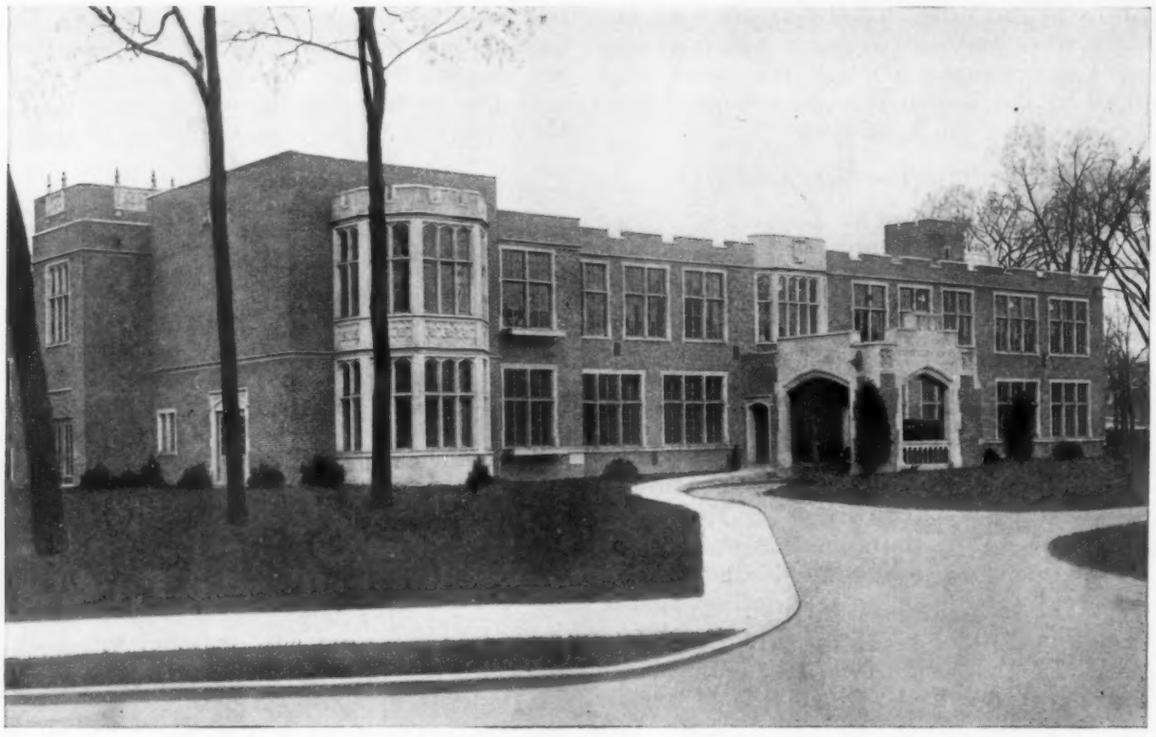
Interest in Tropics Never Waned

After outlining the principal features of a number of tropical diseases, Leishman concluded as follows, "The lines of approach are innumerable, and each disease has its own unsolved problems and its own difficulties, but as so many of them are concerned with insect hosts or transmitters, it is clear that closer and closer study of these and of their habits and life history is bound to be fruitful. One must get far closer down to the *vie intime* of these dangerous pests and learn ever in more and more detail their hopes and fears, their tastes and dislikes, their loves and their hates; we must get into the very soul of a louse, a flea or a mosquito, if we are to wrest from it such secrets as we may hope to utilize."

Leishman passed away after a short illness on June 2, 1926, in Queen Alexandra's Military Hospital and was buried on June 5, with military honors. The street along the frontage of the hospital was lined by a battalion of the Grenadier Guards, and the drive from the chapel to the street by nursing sisters and officers and men of the Royal Army Medical Corps.



And Now an OPPORTUNITY SCHOOL



By *Louise E. Wolk*

ON A SIX acre wooded tract in Des Moines, Iowa, air castles have taken form in brick and stone and mortar as a school devoted to the sciences of healing and education, which opened its doors to the handicapped children of the community last April. All that wisely directed philanthropy could visualize and all that modern science could provide have combined to open new channels for child development with the launching of the David W. Smouse opportunity school for handicapped children.

Endowed by the $330,000 gift of Dr. Smouse, who was a practicing physician in Des Moines for forty years, and Mrs. Smouse, the school is the first in the country to provide facilities to help the various types of handicapped children in one central, scientifically equipped building. It stands as the manifest result of the vision its donors had many years ago of the progress science would some day make, and the urge they felt to utilize such an evolution as the means of aiding these children in their start in life.

The school is organized as part of the Des Moines educational system. It contains grades from kindergarten through the eighth and is conveniently located near the junior and a senior high school so that pupils may continue their studies while benefiting from the special therapeutic advantages of the opportunity school. Besides the regular school physician, a nurse, a hydrotherapeutist, a staff of ten teachers and a principal who is also a trained nurse make up the faculty.

"It is difficult to give each group of handicapped children the proper therapeutic treatment when they are scattered over a wide area," says J. W. Studebaker, superintendent of the Des Moines public schools. "The expense is too heavy to allow much headway under those conditions. For instance, we know that the ultraviolet ray is a body-builder and that on general health principles such treatment would be beneficial to any group of subnormal children. But the expense of giving this treatment in each building is tremendous. However, if we can get all the children who need such help together in one place, the problem becomes more simplified.

"This school is a merger—just as all big business is being merged today," Mr. Studebaker explains. "Now instead of one school for the blind, one for the deaf and one for the anemic, we have all of these groups consolidated in a large building planned to meet the needs of all."

One hundred and sixty students are now enrolled in the school. Children who are believed to need the school are carefully examined by the health department and if their condition warrants the treatment they are sent to the Smouse school. They come from all sections of the city; many of them in a school bus or cabs and the rest on the street cars.

The entire building presents an aspect of brightness and cheerfulness with its tinted walls and floors and its painted lockers and furniture. A center patio gives added color with a tiled fountain, flowers, skylight and wrought iron ornaments. Around the patio is built a ramp for the convenience of the children to whom stair-climbing is an added burden. The ramps are wide enough to allow wheel chairs to pass from one level to another.

The front of the building is utilized for classrooms with special suites set aside for children who are deaf and for those whose eyesight is not normal. With the exception of the rooms for the former group, all floors in the building are tiled. In these rooms, however, the floors are wooden and are built up so that the children may catch the vibrations. The sight-saving room contains specially constructed desks with attached stands to keep the work steady and at a uniform distance from the eye.

Plenty of sunlight and fresh air is available for large windows are found in each room. They may be fully opened to allow the rooms to become open-air classrooms.

The rest room contains sixty cots and each child spends a certain part of the day in relaxation. An indoor gymnasium is a splendid playroom and it may be used as an auditorium, also. The roof provides another excellent playroom and in good weather the children take their exercise on the ladders, bars and swings with which it is equipped.

Adjoining the administrative office of Miss Bess Johnson, the principal of the school, is the therapeutic department. Here are found the nurse's office, the doctor's consultation room, the physiotherapy department with its ultra-violet and infra-red, the hydrotherapy department and a small gymnasium for corrective work. While the usual gymnastics will suffice for most children, many can only accomplish arm and leg movements when they are buoyed up by water. For these a hydrotherapeutic tank has been constructed and the children who will most benefit by the treatment are given this form of exercise.

A complete home-making unit is included with which students of home economics find practical application of their work in the model dining room, bedroom and bathroom. A combined sewing and cooking room and a manual training shop are also included in this unit.

The children receive their lunch in the school cafeteria for 25 cents a week, or if they bring food from home they are served one hot dish at the school for a smaller charge. While a menu cannot be planned for the individual child, the administration seeks to formulate diets that will best serve the needs of most of the children of this type. Tables and chairs in the school cafeteria are built of all heights so that every child can eat his meal comfortably.

Parents receive instruction by which the school hopes to insure proper food at breakfast, at dinner and during vacations. Parents also receive instruction in types of exercise that can be given in the home to supplement that which is offered in the school.

Classwork is kept up to that offered in the regular school just as closely as possible so that the child will not fall back a grade when he is sent back to the regular school. From the fourth through the eighth grade, the departmental system is used and in all ways, except in giving extra medical attention and more rest periods, the curriculum of the school for normal children is carried out.

H. Armstrong Roberts

Christmas morning, with gifts to spare.

Getting Ready for Release

Communicable Diseases in the Home

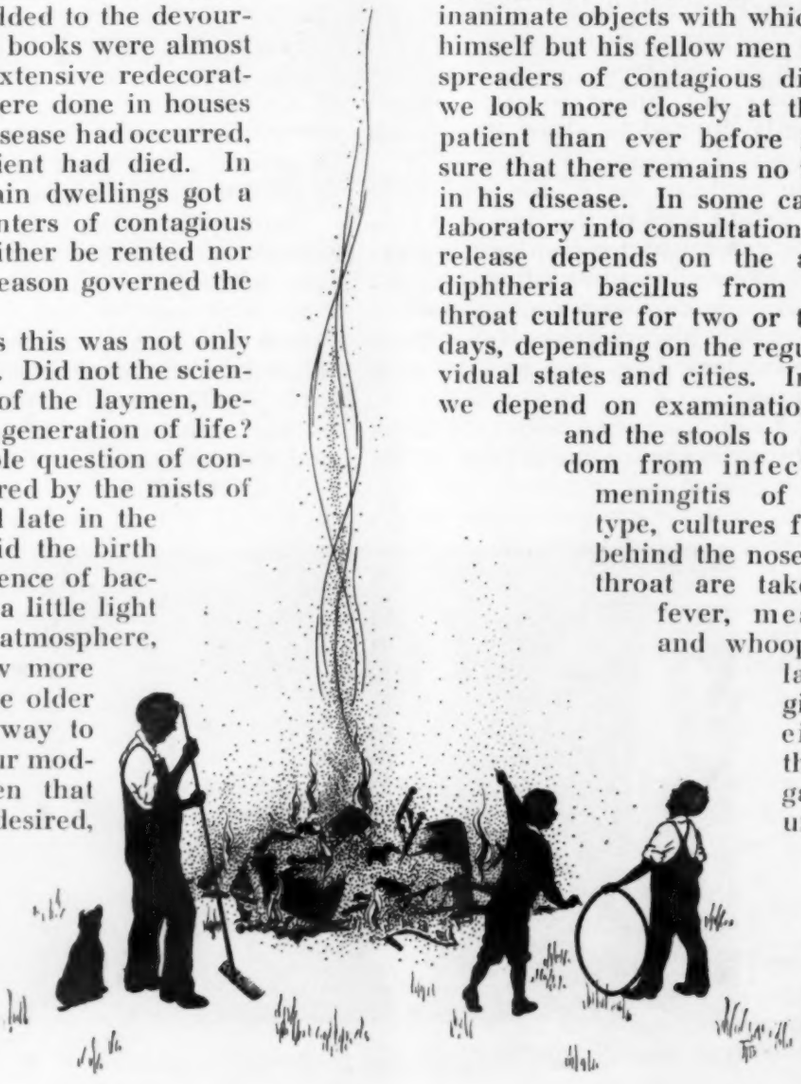
By W. W. BAUER

WHEN recovery from contagious disease has taken place, the patient and the family begin to rejoice at the prospect of release from quarantine. Thoughtful people at this time begin also to consider what they must do to render the patient and the surroundings safe for others who may come in contact soon after the quarantine restrictions have been lifted. For those who are not thoughtful, the community takes such consideration in the interests of its citizens.

In days gone by, recovery from one of the major contagious diseases, such as smallpox or scarlet fever, was the signal for an orgy of destruction. Perfectly good clothing and bedding were burned, mattresses made bonfires in the back-yard and all too often even furniture was added to the devouring flames. Toys and books were almost always destroyed. Extensive redecorating and varnishing were done in houses in which contagious disease had occurred, especially if the patient had died. In many instances, certain dwellings got a bad reputation as centers of contagious disease and could neither be rented nor sold. Fear and not reason governed the procedure.

For many centuries this was not only natural but inevitable. Did not the scientists, to say nothing of the laymen, believe in spontaneous generation of life? And was not the whole question of contagious disease obscured by the mists of ignorance? Not until late in the nineteenth century did the birth and growth of the science of bacteriology begin to let a little light through the murky atmosphere, and as this light grew more bright and diffuse, the older ideas began to give way to what we like to call our modern knowledge. Even that leaves much to be desired, but at least it is better than what went before. So we look at release after quarantine, as we have looked at the preparation for quarantine and the various infections that have been considered in this series, in the light of bacteriology and not through the darkened and foggy glasses of human ignorance and superstition.

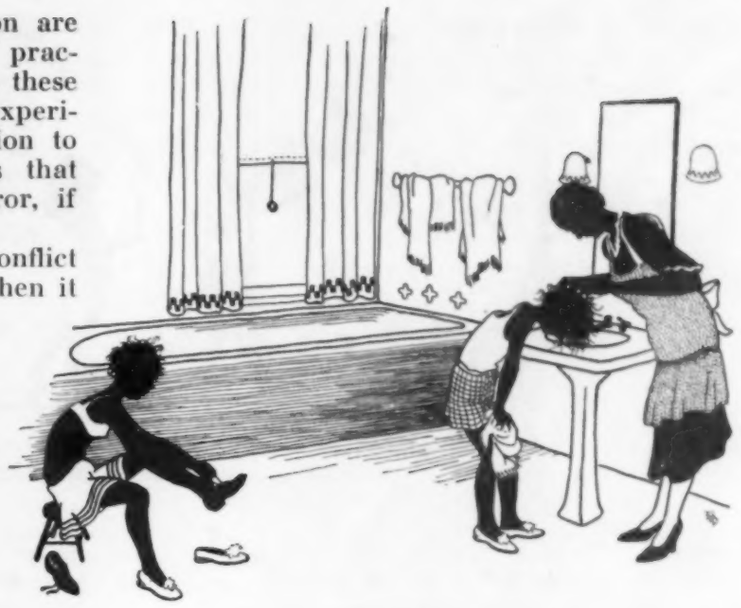
We have learned that man's most important source of infection is man. Not the inanimate objects with which he surrounds himself but his fellow men are the greatest spreaders of contagious disease. And so we look more closely at the convalescing patient than ever before in order to be sure that there remains no trace of activity in his disease. In some cases we call the laboratory into consultation. In diphtheria release depends on the absence of the diphtheria bacillus from the nose and throat culture for two or three successive days, depending on the regulations of individual states and cities. In typhoid fever we depend on examination of the urine and the stools to determine freedom from infectiousness. In meningitis of the epidemic type, cultures from the region behind the nose and above the throat are taken. In scarlet fever, measles, mumps and whooping cough the laboratory as yet gives us no help, either because the causative organism is as yet unknown or be-



Perfectly good clothing, bedding, mattresses and even furniture made bonfires in the back-yard.

cause the present means of identification are too difficult and time-consuming to be of practical use. Therefore we must depend in these instances on collective observation and experience with sources and modes of infection to determine arbitrary quarantine periods that must always be long enough so that error, if any, will be on the side of safety.

Much misunderstanding and needless conflict arise from failure to comprehend that when it comes to release from quarantine, the authority of the health department is supreme, subject to review by the courts only. The family doctor has had, and ought to have had, full authority with respect to all aspects of treatment; the health department has had nothing to do with that unless the patient has chosen to avail himself of the facilities of a contagious disease hospital municipally operated. Now, with recovery, the doctor's responsibility has ceased and with it his authority. He has nothing to say about when the patient will be released; that is not an individual matter.



Preparation for release consists merely of a bath, a shampoo and putting on clean clothes.

A further point to be emphasized in connection with release is that apparent recovery does not always coincide with safety to others. Every doctor, every health officer has had the sad experience of permitting children who have apparently recovered to associate with others, only to be greeted in a few days or weeks with new cases that can be attributed to no other exposure. These experiences have bred a high degree of caution in the makers of the rules that govern release from quarantine. The first care must be safety to the public, and personal inconvenience may only be regretted, not placed above the other consideration. So when the doctor announces that the patient is well, the family can be glad that danger has passed, but it should remember that the doctor speaks of clinical recovery only while the health officer, acting from a public point of view, may decide that a longer period of quarantine is necessary.

Exploded Theories Still Current

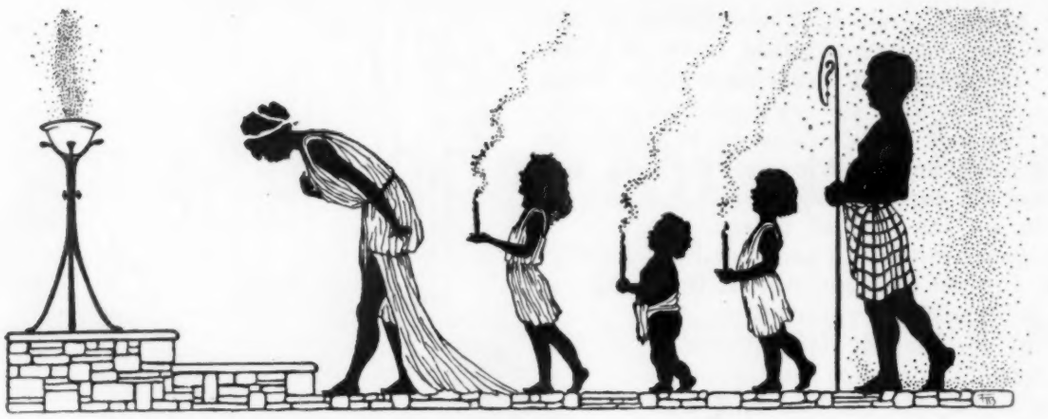
Once the patient has been shown to be no longer in a contagious stage, to the satisfaction of the health department, his preparation for release is a simple matter. It consists merely of a bath, a shampoo and clean clothes that have not been in contact with the infected surroundings.

When one considers the surroundings themselves, he meets at once a great body of knowledge possessed by mothers as a result of beliefs handed down from previous generations. As has been said so often, though apparently not yet often enough, many of these older beliefs are in error. They may have represented the best knowledge extant at the time of their origin, but additional knowledge has been added at an enormous rate within the last fifty years and especially the last twenty-five years so that we cannot afford to depend on the older beliefs. Unfortunately of all the various forms of tradition, superstition is the one that dies hardest, and medical superstitions are the toughest of them all.

Release Formerly Was Complicated

It was customary, in the old days, to behold with horror any article that had been used or handled by a patient with contagious disease. This fear extended to bedding, clothing, furniture, utensils, toys, books and even the walls and floors of the building in which the patient received care. Much of this ancient dread has been shown to be lacking in justification since we have come to recognize the greatest source of danger in the patient himself rather than in his possessions. It was the established custom in the days of our grandparents, even of our parents, to destroy ruthlessly everything that the patient had used. Today, we have learned better. Instead of destroying afterward we select beforehand only the things absolutely necessary for the care of the patient and remove everything else, thus making a real and worthwhile saving of useful articles. When the case terminates, we are then in better position to get ready for release.

Articles that have been used by the patient fall into four general classes, each of which is handled according to its characteristics: First, there are the things which are of no further use and which we have chosen as described in the first article of this series. They have been destroyed by burning from time to time during the progress of the case; if any remain, they are easily and summarily disposed of in the same



A meaningless ritual, a sacrifice on the altar of ignorance, an empty ceremony and a bad odor—that is fumigation.

manner. This of course destroys all infective material and is the most efficient means of disinfection. Second, we have things that may still be useful and are of such character that they can be boiled, including dishes, knives, forks, spoons, bedding, metal and enamel utensils and clothing of certain kinds. Washing and boiling make them perfectly safe, and there is neither reason nor excuse for wasteful destruction. Next, there are articles that can be washed but not boiled. Woolen bedding and clothing are examples of this type. Washing in good generous soap-suds followed by a thorough airing is all they need. Finally, we come to things that can neither be burned, boiled nor washed. Mattresses are excellent examples of this kind of goods, because they cannot be handled by any of the foregoing methods except burning, and their destruction is expensive. If they have been properly covered during the illness, they have been protected against any but the slightest contamination, so we may be content with simply giving them a surface brushing with warm soap-suds, not wet enough to penetrate the ticking, or a vigorous scrubbing with a damp, not wet, cloth, and then allowing two days of sun, one for each side. Men's and boys' suits or women's clothes of wool, silk or other material, not suitable for the washtub may likewise be thoroughly brushed and then aired and sunned, after which a trip to the dry cleaner will finish the process.

Ordinary Cleaning Rules Apply

The same principles are applied to the room or rooms in which the patient may have been. Woodwork and furniture are washed and polished as they would be in any spring or fall house cleaning, paying especial attention to door knobs, window sills, dresser and table tops, chair arms and portions of the woodwork on which small hands may have left traces of contamination originating in nose and throat.

The whole process is simple, and one that every housewife thoroughly understands. There is no mystery or magic about it. It is cheap. It requires only four ingredients: hot soapy water, sunshiny fresh air, elbow grease and horse sense.

Whenever I offer these suggestions to a visible audience, I am always conscious that there are some persons who are waiting to hear about disinfection. What is disinfection? It is the removal of infection. The foregoing process satisfies every requirement of satisfactory disinfection; it washes infection away. But what about killing the germs? As a matter of fact, soap and water are deadly enemies of the germs of disease. So also are fresh air, heat and sunshine; otherwise all of us would long since have been overcome by disease germs.

Likely to Rely Too Completely on Chemicals

Disinfection was the first weapon against germs in surgery. The procedure of the British surgeon Lister was to kill germs with chemical solutions. Today surgery excludes germs—by means of heat and soap and water primarily—instead of trying to kill them where they are. Lister's method was antisepsis; the modern method is asepsis. Just so in the home, asepsis is better than antisepsis. Disinfectants are not necessary except in limited circumstances when the doctor will order them and explain their use. In ordinary cleaning after a contagious disease their use has a tendency to detract from the thoroughness of the cleaning because too much reliance is likely to be placed on the chemical. There is nothing magical about disinfectants. Some of them are poisonous and these are better kept out of the home because of the danger that children may accidentally get hold of them.

One final word about disinfectants, for those who feel safer in using them. Use them in the strength recommended by your doctor, not stronger. Their efficiency does not increase with strength of solution after a certain point. And the stronger the solutions, the more likely they are to set up skin irritations or even serious burns.

And what about fumigation? Do you remember the health inspector who used to come to the homes of our childhood days with his little black bag of equipment? He proceeded to stuff newspapers in the chinks of the windows, then he hung a sheet in the middle of the room, or he set his fumigator in a pan of water on the floor. He either saturated his sheet with formaldehyde or started his formaldehyde fumigator or lighted the sulphur candle, retreated in haste, closed the door and plugged up the cracks around that. The next day he came back to open the room, or left instructions as to when it could be opened. That was all there was to it. And we did not hear much about cleaning up. Oh no, fumigation had taken care of everything! But unfortunately, as we have learned since, it had not. The gas would kill human beings if they were exposed and would also be fatal to rats and mice.

Fumigation Is Powerless Against Germs

Fumigation is still used successfully as a weapon against vermin, especially in connection with ships, but as a disinfectant aimed at germs it is thoroughly discredited. It does not penetrate to the germs, for one thing. And what a smell! If sulphur was used, what tarnishing of metal fixtures and bleaching of colored fabrics, for everything had to be left in the room. How well has fumigation been described by the health officer who characterized it as a "meaningless ritual, a sacrifice on the altar of ignorance, an empty ceremony and a bad odor!" All that in addition to the expense of equipment and materials, salaries and transportation to carry it out. It was part of the law in many states up to a few years ago; unfortunately it still remains on the statute books in a few.

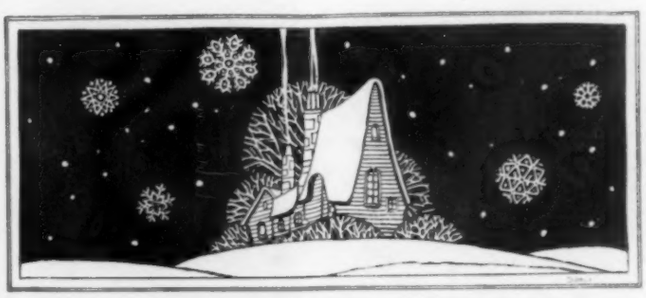
Having prepared the patient and the environment for release, there remains a few odds and ends. Milk bottles have probably accumulated during the quarantine, and must now be removed. Fifteen minutes in boiling soap-suds in the wash boiler will sterilize them, and they must be sterilized before they are returned, even if the dairy does repeat the process at once. Library books should be returned, wrapped, with special attention called to the fact that they are coming from quarantined premises. In some cities they may be ordered burned, either by the borrower or by the library. That is probably unnecessary. Simply putting them out of circulation for a month is enough, for the germs of contagious disease do not live long outside the human body. If they did, epidemics would be even more common than they have been.

If the patient has died, procedure is exactly the same as if recovery had taken place. Regulations still vary as to disposition of the body, but there is a growing tendency to recognize the fact that, except to the undertaker who handles the body, there is little danger, if any, to be apprehended from the dead. The danger is in contact with the persons who have been near the deceased person during his illness. Funerals are usually required to be private for that reason and not because there is any hazard to be feared from the corpse. The old regulation about burying within twenty-four hours is gradually losing ground, as it should have long before this, but it must of course be obeyed in localities where it is still in force. It should, however, be repealed as expeditiously as possible; there is no justification for it.

Family Must Consider the Community

Last of all, if the patient is a school child, there may remain a period during which school attendance is not allowed though the quarantine may be no longer in effect. A fair and reasonable procedure under such conditions is to avoid association with other children inside or outside of school.

Throughout all dealings with communicable diseases, from preparation for quarantine until its final termination, the guiding principle of the health authorities is concern for the safety of the public. To the extent that parents can accept the same point of view and endure their own inconveniences for the greater good of the greater number will prevention of communicable disease be more effectively accomplished, to the greater safety and happiness of our children and, through them, of ourselves.



KING WINTER HOLDS COURT

Heavy snowfall added risk to racers competing for a European ski-running championship in Switzerland recently.

USHERS IN SWEDISH HOLIDAY SEASON

Just an old Swedish custom is observed on December 13, as the youngest unmarried girl of the family, or an outsider if there are no girls, dons "The Crown of Lucia Bride," a wreath of holly holding five candles. Serving in their beds older members of the family with coffee and cakes, she inaugurates the season of good will.

SANTA CLAUS IN THIS GUISE VISITS German mountain villages.

Photos by Herbert

Ewing Galloway

CONVALESCING

Patients at one of Dr. Rollier's clinics in Switzerland enjoy games on the solarium.

Acme

ENGLISH FOOTBALL ENTHUSIASTS

Three King's Scholars cheer for victory over Town Scholars at Westminster, London. Which is making the most noise?

Acme

ENGLAND'S NEWLY REELECTED HEALTH MINISTER, Neville Chamberlain, leaves cabinet meeting.

Ewing Galloway

MINISTRY OF HEALTH BUILDING is part of modern Turkish city.

THIS IS HIS ROYAL HIGHNESS

BY MARGUERITE GODE

I

THIS is the bowl of flaky corn
That is covered rich with cream each morn
And served to His Royal Highness.

Bowl of Flaky Corn

II

This is the milk man dressed in white
Who delivers the cream before daylight
That it might cover the flaky corn
Which is put in a blue bowl every morn
And served to His Royal Highness.

The Milkman

III

This is the maid with cheeks of red
Who milks the cow in the milking shed
And sells the cream to the milk man white
Who delivers the same before daylight
That it might cover the flaky corn

The Maid

Which is put in a blue bowl every morn
And served to His Royal Highness.

The Farmer

IV

This is the farmer who drives the plow
And plants his corn for the hungry cow

Which is milked each day in the milking shed
By the happy maiden with cheeks of red
Who sells the cream to the milk man white
To deliver at once before daylight
That it might cover the flaky corn
Which is put in a blue bowl every morn
And served to His Royal Highness.

The Farmer's Wife

V

This is the farmer's faithful spouse
Who cooks his meals and tends his house
That he might go and follow the plow
And plant good corn for the hungry cow
Which is milked each day in the milking shed
By the happy maiden with cheeks of red
Who sells the cream to the milk man white
To deliver at once before daylight
That it might cover the flaky corn
Which is put in a blue bowl every morn
And served to His Royal Highness.

VI

This is the nurse who never fails
To weigh His Highness on the scales
And send his chart to the farmer's spouse
Who cooks the meals and tends the house
That the farmer man may drive the plow
And plant good corn for the hungry cow
Which is milked each day in the milking shed
By the happy maiden with cheeks of red
Who sells the cream to the milk man white
To deliver at once before daylight
That it might cover the flaky corn
Which is put in the blue bowl every morn
And served to His Royal Highness.

The Nurse

Puffer-Billy

A Story for Boys

By

DOROTHY E. BRESNAHAN

Bud knew the engineer could not see him in time to stop the speeding train.

THERE was only one dark cloud in the sunny skies of Tom Warner's happy young life, and that was in the person of the arrogant and thoroughly annoying boy whom the school knew as Bud Mack.

Tom and Bud seemed always fated for rivalry. There were two seventh grades in Center School; Tom was in one, Bud in the other. As they both were splendid young athletes and the pride of their respective classes, they often fought in competitive games to bring the honor of victory to their home room.

Sometimes Tom's team would win; again Bud's would be victorious. But the school agreed that Tom and Bud were such all round athletes and so evenly matched that it was impossible to decide as to which was the better.

Tom liked and admired Bud for his ability and his fine clean sportsmanship, but Bud's attitude toward Tom outside of the playground was far from being sportsmanlike or kind.

Bud either ignored Tom entirely when they met, or if the mood pleased him, he would taunt and tease Tom by any method he could devise.

There was one way he knew whereby he could embarrass Tom to such an extent as to make the blood rush to his sensitive face. It was a simple way and it always had the same effect of annoying and embarrassing Tom. Just a few words, a certain question, and his rival was always defeated.

As Bud was returning to school for the afternoon session one December day, he saw Tom a short distance in front of him and he hastened to catch up with him before Tom reached the railroad tracks.

He quickened his steps almost to a run until he was near enough, then in his usual insolent way strolled along beside Tom as they reached the tracks.

"Hello, Tom," he said; "still afraid of the Puffer-Billy?" This was the name the boys had for the puffing engines that steamed through the town.

Tom's face reddened painfully and he crossed the tracks, while Bud's countenance crinkled with glee as he turned to walk the tracks over the trestle—his usual short cut to school.

Tom was a boy scout and to a boy scout a promise is as solemn as an oath, particularly since it had been made to his mother whom he loved so dearly.

When he had first gone to Center School his mother had asked him to promise her that he never would take that dangerous short cut over the trestle. To go that way was much shorter as it meant cutting off three blocks, but it also meant that for a long distance one had to walk on the sleepers, or ties, that supported the rails. The distance between these ties varied and through the spaces one could see the water flowing darkly in the deep ravine below.

Children had been known to dare crossing the trestle and then when they had reached the middle to become so frightened by the wide spaces between the sleepers and the cavernous depth below them that they would cry out to their companions to help them get back again to safety. By themselves this seemed impossible and like birds frightened by a gigantic snake they seemed absolutely powerless to move forward or backward until some one would by a helping hand break this spell of fear and assist them to retrace their steps to safety.

Once, Bud too had experienced that sickening fear but he had stubbornly refused to allow it to conquer him and had somehow kept on until he reached the end of the terrifying stretch.

Since that time he had perfected this dangerous skill so that now he was able to run across the ties as fleetly as some boys could run on solid ground.

Naturally Bud's parents knew nothing of their son's foolhardy habit.

As Bud's taunting question whipped the blood to his cheeks Tom tried not to seem concerned, and he thought of his promise to his mother and of the first aid rule he had learned as a scout—that avoiding danger prevents many unnecessary accidents. So though he would have liked to prove to Bud that it was not fear that kept him back, and to show Bud that he could run the trestle with a skill equal to Bud's own, his only answer was silence as he crossed the tracks and continued his way to school.

"Ho!" exclaimed Bud softly to himself, "that's the time I made him feel cheap." And instead of going down the trestle he turned and sat down beside the tracks.

Somehow Bud felt more of a tease than usual that day, so he decided to give Tom time enough to walk the three blocks and then to be at the other end of the trestle to meet him, and taunt him once more with that old question, "What's the matter? Still scared that the big Puffer-Billy will get you?"

So Bud did not start until he thought he had given Tom enough time to walk the greater distance, and then he started to go down the tracks, running with skilled and measured steps over the wooden ties.

He was about half way across when suddenly he heard the shrieking whistle of the one o'clock express. He had delayed too long! The train was approaching the bend which was the start of the trestle, and Bud knew the engineer could not see him in time to stop the speeding locomotive. His only chance was in running on as fast as he could and trying to reach the end of the bridge.

He made a desperate effort and was just a step from safety when the train, its brakes grinding and creaking from the attempt the engineer made to save the boy, came down upon him.

A moment of terrible pain, then a period of kind oblivion, in which Bud dreamed how his seventh grade room beat Tom's in a close game of basket-ball.

When Bud finally returned to consciousness he discovered that he was in a white-walled room, and saw the white form of a smiling nurse bending over him. A dull pain in his left leg brought back the memory of all that had happened, and slowly he realized that part of that leg was gone.

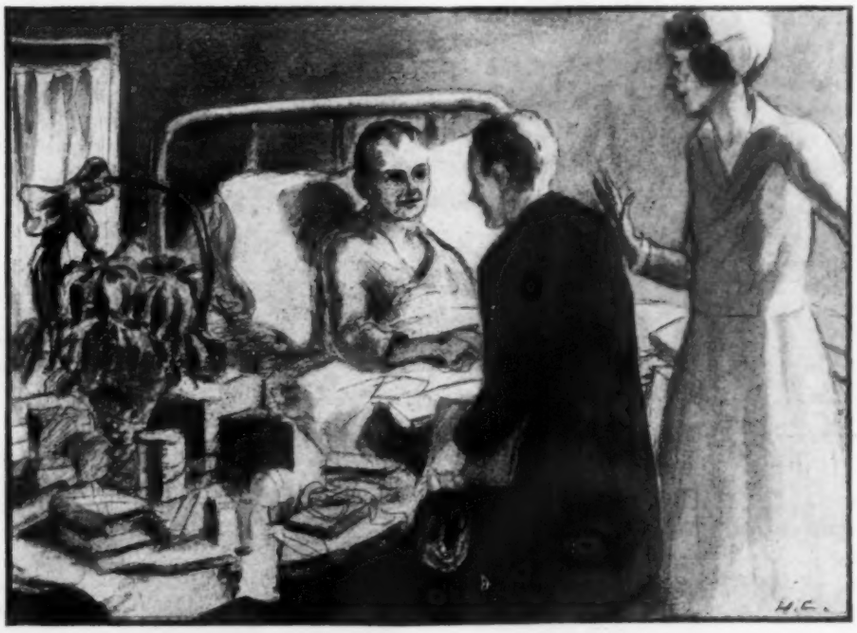
His eyes filled with tears and he closed them lest the nurse should see that he was crying. He thought of his parents, and forgot the pain in a wave of remorse that he had disobeyed them and brought upon them this grief.

Then he felt two arms encircle him. He opened his eyes and saw his mother and father beside his bed, his mother's head close to his own, his father standing and squeezing Bud's hand in his.

"It's all right, Bud," his mother was saying, "just try to forget everything and sleep for a little while. You'll be feeling better soon."

Somehow her voice reassured poor Bud, and the warm clasp of his father's hand comforted him. With a tired sigh he closed his eyes while the tears he had been trying to hold back rolled down his cheeks and dried there as he slept.

Bud began to recover from the shock a few days later.



"We'll always be friends, won't we Tom?"

The nurse had told him stories of soldiers who had been wounded in battle and how bravely they had faced life despite the loss of limbs, how they swam, played ball and even ran races; and instead of feeling sorry for themselves had laughed and joked and made a place for themselves in the world.

If others could do such things he could too, and Bud found himself looking eagerly forward to the time when he would match his ability against this new physical handicap. He knew that in time he would make good, and that one day the other fellows would admire his skill despite his deformity. It would be a game, and he would win.

After this Bud didn't mind talking about the accident. Somehow it seemed far distant and he asked his nurse to tell him just what had happened after that first awful moment.

Then it was that he learned how Tom had helped save his life. Tom had used his first aid knowledge and had bound Bud's leg with his scout handkerchief above the amputation. Then he had inserted a stick in the bandage loop and twisted it until the bandage became tight enough to stop the severe bleeding. It was Tom also who had used the clean towels the train porter brought to cover the open wound; who had commandeered a car and directed the men how to lift Bud into it; who had held his poor leg higher than the rest of his body so as to help stop the bleeding while the car sped toward the nearest hospital.

What a friend Tom had been!

When at last Tom was allowed to visit Bud in the hospital it was Christmas Day, and Bud's bed and table were piled high with packages. The two boys shook hands and as they looked into each other's eyes they knew that they had always been friends despite their seeming unfriendliness in the past.

"It's hard for any fellow to beat a Puffer-Billy," said Bud to the misty-eyed Tom, "but it took the beating that Puffer-Billy gave me to make me see what a great pal you are! Your visit is the best of all the Christmas gifts I have. We'll always be friends, won't we?"

And though the pupils of Center School would never have believed it of their two manly athletes, Tom put his arms around Bud and Bud embraced Tom.

"Sure," whispered Tom with a funny catch in his voice, "friends and pals from this Christmas Day—forever."

GLASSES

By Lois E. Dann

I'm a little girl with glasses on.
At first it made me sad,
But father told me something
That has made me truly glad.

He says when a girl wears glasses
It shows that some one cares,
And that if there is trouble
That trouble some one shares.

Some eyes, you know, are not made right
And lenses make them better.
They make it so you plainly see
Each tiny word and letter.

So any child with glasses on
Has one who loves him dearly.
Since my father told me that
I wear my glasses cheerily.

HEALTH and the SCHOOL

Edited by J. Mace Andress, Ph.D., 67 Clyde Street, Newtonville, Mass.

Fighting Fatigue

ROBERT was considered a stupid and disagreeable child by all his teachers. He took little interest in his school work. It was difficult to appeal to him. School was boredom. In both the schoolroom and on the playground he showed signs of an uncontrolled temper. Then, too, Robert was sometimes repulsive because of his lack of cleanliness. Often he came to school with dirty hands, face and clothing. His walk was shuffling and his posture poor. Nearly every week he was sent to the principal's office for discipline. The teacher said he was mentally deficient and she merely tolerated him.

One Case Solved

Robert might have grown up with the stigma of moron attached to him instead of graduating with honors from the high school if two things had not happened. First, the school psychologist gave Robert some mental tests. Much to the surprise of Robert's teacher he was pronounced above normal in intelligence. Next the school nurse one day found Robert fast asleep with his arithmetic book in his hand. She was a keen observer and her experience told her that thin, pale-faced boys who fell asleep in school did not behave in that way just because they were lazy. She did not reproach the boy but the next day, seeing him in the hall, she greeted him in a friendly way, and in the course of the conversation referred to his sleepiness in school. Robert admitted that he was tired and sleepy all the time. The nurse finally obtained the whole story from him. He got up at 4:30 a. m. to sell newspapers and he hurried to school with an inadequate breakfast of crackers and tea. He helped do chores and run errands around home after school. Even on Saturdays there was little chance to play. The family was large. At night the radio ran until after midnight. He went to bed late and shared a bed with an older brother. The sleeping room was poorly ventilated.

When the school doctor was notified of these facts about Robert, he pronounced it a case of chronic fatigue. The teacher, an able and conscientious woman, changed her attitude toward Robert, and by enlisting the help of the parents Robert was provided with more sleep and rest, nourishing food and play. In a few months he was a new boy. He became good-natured rather than irritable. His posture improved. He took a keen interest in his personal appearance. His marks showed rapid improvement.

The case of Robert is only one among thousands of cases of tired school children in America. There is a high pressure in modern life that tends to produce chronic weariness. With restricted living quarters there has been a decrease in the hours of sleep. Meals are often hurried and irregular. Too little opportunity is given for rest during the day. In many ways the conditions in the schools have not made for improvement. Although the curriculum has been enriched, more work is required of children both in home and school. The opportunity for helping around the home by doing chores has decreased, but usually more time is required in preparing school work. The simple educational methods of the past have often resulted in rapid changes and confusion. Adjustment to the rapid changes in home, school and society has been slow. In spite of all that has been done for the health and physical welfare of the modern school child, too little attention has been given to the problem of fatigue. The tired child demands our attention.

There is a high pressure in modern life that tends to produce chronic weariness.

Need Short Periods of Rest

Among the students of industry the importance of fatigue has been recognized. Taylor found that even in such a simple task as loading pig iron on flat cars there was a law that determined the efficiency of the workers. The task was that of picking up a chunk of iron weighing 92 pounds and carrying it to a car and dumping it. Taylor found by actual experiment that a man carrying such chunks of iron should be loaded only 42 per cent of the time. During 58 per cent of the time the man should be either returning from the car or resting. Under such a schedule of short periods of rest it was found that the average worker was able to load 47 tons instead of 12.5 tons. Although many experiments on school fatigue have been carried out, comparatively little has been done in the modification of the school program.

Although most children do not suffer so much from fatigue that their health or school work is threatened there are some children that are in grave danger because of chronic fatigue. Not only does such a condition seriously affect the quantity and quality of work, but the fatigued child is more susceptible to infections. One of the most insidious results of fatigue is its tendency to make the child conscious of his body, and his mental and physical activities become real efforts. A reserve of energy pro-

motes wholesome mental attitudes and joyful animated living.

So important is this subject that the editor of this department has asked three prominent educators and students of practical hygiene to discuss the problem of fatigue in the division "Teaching Health."

A book that should be in every teacher's library is "The Tired Child" by Max Seham, M.D., and Grete Seham (J. B. Lippincott Company). This book might well be made the basis for discussion in one or more teachers' meetings.

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

FATIGUE IN AN OUTDOOR SCHOOL

AFTER years of study and observation of the underweight and undernourished children entrusted to our care, we have decided that fatigue is one of our outstanding problems. It not only undermines the health, but the fatigued child is unable to pursue his studies in the proper way. We have found that many of the so-called retarded children are not really retarded; their minds merely are dulled by fatigue and it becomes impossible for them to think clearly and to concentrate as they ordinarily should.

When children first come to us they are given a thorough physical examination. We then watch them carefully and ask the teachers to give the same watchful care. In this way we observe the first signs of fatigue and immediately search for the cause. It may be due to work in the home, late retiring hours, too much play and activity or home work. To help overcome and correct these difficulties we seek the cooperation of the home. At school frequent relief drills and rest periods are given when the children are allowed to relax completely.

That worry is another great contributing factor to fatigue is too often overlooked. Many children overwork to the point of exhaustion in their efforts to attain high marks or to pass examinations; others overdo because of a spirit of competition. We have a much higher calling than merely training children in the academic work. It is our duty to help them build strong, healthy bodies and teach citizenship, cleanliness and happiness; in fact, teach them how to live. Three years ago we revised our report cards giving as much prominence to health, work habits and citizenship as to the academic studies. As a result we received many messages from parents to this effect: "We know more about our children now than we ever did before." Also the children are happier with these report cards and take a greater interest in them. I have mentioned report cards particularly because we believe that they are responsible for much worry and unhappiness that cannot help but produce a fatigue condition.

Play periods and recesses are carefully supervised, a minimum of play being given to certain groups. Children with heart disease, nervous disorders and with cases of severe fatigue exercise only under the supervision of the nurse at the recommendation of the family physician or school doctor. Quiet games and some occupational therapy are used.

Again, we try to make the dinner period as happy and restful as possible. The children are grouped together according to age and grade, six being seated at a table. They are allowed to talk freely, without restraint, avoiding any nervous tension.

Our program is arranged to meet the needs of the individual child; therefore no child becomes discouraged because he feels that he is not keeping up with his regular classroom work. One long rest period of fifty minutes is given directly after dinner. The rest is taken in a large room equipped with cots built for that purpose. The windows are opened and the curtains arranged to make everything conducive to rest and quiet. Soft music is played for about fifteen minutes at the beginning of the period because there is nothing more soothing to an overtired person. As a result the majority sleep and the others relax. At the close of the period appropriate music is again played to awaken the children.

We do not want the children conscious of fatigue or of the fact that there is such a thing, and we are careful not to emphasize the matter, merely treating it as routine. I might say that our great aim is to create a happy, restful atmosphere and to make the school as much like a perfect home as possible. We know that when a person radiates happiness and contentment there is less evidence of fatigue. We also believe that to bring about happiness and contentment we must have a happy, healthy faculty, sympathy and understanding.

MARY A. READETT,
Principal of the Outdoor School,
Hartford, Conn.

SLEEP—"CHIEF NOURISHER IN LIFE'S FEAST"

WHEN sick one needs no argument to be convinced that rest is of prime importance in getting well. Yet many arguments are needed to convince one of the value of rest to maintain health.

In most classes for the care of children physically below par, provision is made for rest periods in the morning and in the afternoon, but how many schools provide rest periods of any kind for the children in regular classes? The U. S. Children's Bureau gives as the amount of sleep required by the average child: from 6 to 7 years, twelve hours; from 8 to 10 years, eleven hours; from 11 to 12 years, ten or eleven hours. The average youth of from 13 to 15 years requires ten or twelve hours sleep; between 16 and 18 years, nine or ten hours are needed.

Dr. Josephine Kenyon, an authority in the field of child health, says, "Long hours of sleep from 8:30 p. m. to 7 a. m. are more needed by the adolescent than by even the younger child." It would be interesting and profitable for teachers to make a sleep survey of their pupils and find how many actually do have enough sleep.

In one high school it was found recently that 50 per cent of the senior high school students were sleeping seven hours or less; in the junior high school grades, 3 per cent were sleeping seven hours or less. A health habit survey made not long ago in an eastern city high school revealed the fact that 5 per cent of the student body habitually arose at 6 o'clock or earlier every morning.

Studies made by the National Child Labor Committee indicate that the child labor problem today is the labor of the school child.

Many children who are attending school work before and after school hours for a number of hours. This cannot help but result in fatigue, weariness and lowered vitality.

Another consideration that makes sufficient sleep difficult for the adolescent is home work. As one high school student expressed it, "One of the health needs of this school is that we need either less homework or more study time, because many students like myself work after school and therefore must stay up until 12 or 1 o'clock at night in order to get our home work." Another one wrote, "All teachers should be considerate and remember there are seven others that cause us to sit up!"

Recent studies in this country on large groups of children have indicated the prevalence of tuberculous infection in many apparently healthy children. On the basis of these studies it is estimated that more than two million children in the United States under 15 years of age have active or inactive tuberculosis of the childhood type. All these children need medical supervision, and adequate rest is essential to build up their vitality and resistance against the spread of the infection. In addition to this staggering number, the incidence of tuberculosis between the ages of 15 and 25 sharply increases. Adolescence for many persons is the critical period in which the issue is determined as to whether or not tuberculosis will develop as a damaging disease.

Tuberculous infection need not be a menace to health—it may confer immunity. But there is one striking difference between this immunity and that resulting from other contagious diseases. Whereas the immunity following measles or mumps is complete, that following tuberculous infection is effective only up to a certain point. If the body is brought into a low state of health through severe illness or if one exhausts his strength and lowers his vitality, this immunity may break down and active tuberculosis may develop. Vitality is lowered by too strenuous exercise, too little sleep, improper diet, fatiguing labor or any of the overindulgences to which youth is prone.

What can the schools do about this problem? It is a challenge to which the intelligent teacher everywhere will give thoughtful consideration. The committee on health and physical education in junior and senior high schools of the commission on the curriculum, appointed by the department of superintendence of the National Education Association, has recognized the need for rest during the school day. In its report are these statements:

"Within the school there should be alternation of work and rest with frequent periods of cessation from study and opportunity for breathing fresh air. The tendency toward too many and too intense social activities should be controlled. Excitement is not only fatiguing, it is exhausting."

It is a mistake to assume that adolescents are not interested in matters concerning their health. Most movies, parties at home, sharing a room with an elder brother or sister or with parents are serious factors in preventing the rest and sleep that the growing child needs. The majority of parents err through ignorance and welcome an opportunity to learn how to do what is best for their children.

"Chief nourisher in life's feast" is sleep, the device of Nature for seeing that we get the rest we need.

of these young people have a deep desire to be attractive, though they often have mistaken ideas as to how to attain their desire. Yet these youngsters are alert and thirsting for knowledge. They have a healthy curiosity to know the "why" of things, and they are keen in observing wherein practice fails to follow information. "We study physiology," remarked one high school student, "and in this study we learn not to eat our meals fast, but slowly. How can we do that when not enough time is given us!"

No girl wants to look old before her time. When she learns that that is the penalty she will probably have to pay for cheating herself of the rest she needs, she is likely to take heed. Dr. E. R. Hayhurst, specialist in industrial medicine, says, "Young persons, particularly those under 18 years, are permanently and more seriously damaged by the poisons and toxins of fatigue than are those of maturity." High school boys and girls are thinking of their future and can understand the effects of fatigue on physical growth and working efficiency in relation to their success in business or industry. The recent experiments on sleep conducted at the University of Chicago, Colgate University and George Washington University will be intensely interesting to them.

The need for friendly and cooperative relationship between home and school is urgent here as in other phases of health education. Of what use is it for the school to teach the value of sleep and rest when the home fails to make it possible for the child to sleep as long as he should? The radio, the

In the fast-moving days that seem to characterize our present civilization, it is necessary to exert every effort to see that adequate rest is provided for every child to maintain sound health of mind and body.

LOUISE STRACHAN,
Director Child Health Education,
National Tuberculosis Association,
New York City.

FATIGUE IN PHYSICAL EDUCATION

FATIGUE in physical education is, or perhaps one should say should be, a governor for safety. The problem of fatigue is closely related to that of rest and, strange as it may seem, both are receiving only stepmotherly attention. For the symptom fatigue, many persons manifest only passing interest, and for the remedy, rest, they have no time. In the whole set-up of health education rest, one of the most important developmental factors in the life of a child, has but a meager place.

In the child welfare programs of European countries rest is conspicuous, not merely as a beautiful phrase but by the extensive practice of it in which even adults share. Many of the ills in which we lead the world may well be due to or aggravated by an almost constant state of fatigue.

In physical education and particularly in athletics, signs of fatigue either are not recognized or when recognized are ignored, since the consequences are only vaguely appreciated. The developmental significance and influence of physical education upon growth has long

since been accepted. Dr. Hoske of Germany points out that intensive muscular activity is far more purposeful and effective than monotonous groups of exercises, but it is important that periods of rest follow to restore the former normal condition. The possible damage results less from exertion than from the lack of time permitted for recuperation. The problem thus is one much less of concern as to type of activities than of procedure or practice. One needs to digest Mosso's study of fatigue to grasp its full significance. An illustration used by him may clear the vision for understanding: "When the energy of a muscle has been lessened by exertion, a feeling or a sensation of pleasant relief comes to the muscle when the weight to be lifted is slightly assisted." (He uses weight lifting as a test.) "He who in a state of fatigue, by gross exertion, succeeds to lift 50 Kg. will become conscious of the adding of a mere kilogram to the extent of failing in his effort of lifting. Were he, on the other hand, free from fatigue and lifted 80 or even 100 Kg., a few added kilograms over 50 would hardly be noticed by him." From this Mosso concludes as one of the first laws of fatigue and sensation that: "The intensity of fatigue is not in relationship with the external cause which created it."

Competition Must Not Be a Whip

Mosso recognized the lowering of muscle strength on the one hand and the inner sensation of fatigue on the other. Fatigue, like other sensations affecting our nerves, does not arrive at a state of consciousness until it has reached a certain degree of intensity. As physical education concerns itself mainly with the growing human being, whose energy is needed and intended for growth and development, one need not be pedantic to assert that extravagance by undue expenditure of energy should be avoided. Youth should be protected, not urged. Competition may be a strong incentive or it may serve as a whip. It is an incentive when in keen rivalry the body is urged to do its utmost to overcome the efforts of an opponent, provided, of course, that one's own will to do is in command. It serves as a whip when outside urge is employed, when interests and motives such as duty toward school or town enter in, and when notoriety in the form of championships comes into the picture.

In our athletic programs for boys and girls in both junior and senior high schools, some definite matters require sane adjustment, such as length of schedule for the season, the number of games per week and the place and time at which the games are played. One game in an interscholastic schedule will lead to fatigue sooner and more markedly than several practice games; hence there is the need for schedules of from six to eight games instead of the now customary twenty or thirty, such as in basket-ball. Regular practice, plus one big game a week, insures recovery time from fatigue for the next week's task. Two games per week are undesirable, and three or more are criminal. Opponents in any contest should be fairly evenly matched to insure safety and to serve as a fair basis for sportsmanship. Therefore, in building schedules schools should play within their class instead of lending themselves as battering rams for larger schools with stronger teams.

Evening hours should be avoided for competition, for vitality is at its lowest toward night, particularly in growing boys and girls. Play should take place under the best possible hygienic conditions and not in ill-ventilated places. At all times the boy or the girl must count for more than the game.

Child More Important than Game

Judgment in these matters at present depends too much on mere external physical appearance. It was pointed out by Dr. Matthias of Munich, a noted biologist, that many times a husky looking youngster of 14 or 15 or over is a greater risk than the small fellow who perhaps developed more evenly. The husky one may develop in bulk only at the expense of vital organs. Physical education, intelligently guarded and guided, will find the proper dosage for the individual. It will aim at a balance between intensive exertion and the proper period for recuperation. However, physical education should not fall short of exertion but should consider record performances merely as incidents, not as necessary goals.

A nation's power is not measured by the number of championships it holds; a people's strongest weapon is still the mind, and when it has command over a strong and pliable body it will endure. Fatigue is a danger signal that needs to be closely watched. Loss of weight frequently is an accompanying condition in strenuous muscular effort. After intensive exertion loss of weight is a logical and not necessarily harmful consequence, and when one is in good condition such a loss is restored within twenty-four hours. It is only when the loss is not regained, either nearly or entirely, that caution should be exercised. Furthermore, intensive exertion will draw continuously on the supply needed for growth, and a prolonged drain on this source of energy is at least a hindrance to a full development, if not a cause for collapse.

Physical education, as a recognized phase in a health education program, must free itself from those practices that are neither educational nor biologic. Physical education needs a keener interest and protection from the medical profession. It needs a service from this profession that will aid the right-thinking teachers in this field in convincing school officers and the public that the real purpose of physical education is to protect and to build young man and womanhood, rather than to train and urge for achievements that tend to act contrary to this endeavor.

CARL L. SCHRADER,
Massachusetts State Supervisor of Physical Education,
Boston, Mass.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE child's sense of fun is recognized by everybody. It is a matter of common experience that when the daily and the Sunday newspaper arrive all the children of the household scramble for the "funnies." The Evaporated Milk Association has tried to capitalize this interest through a comic strip.[1] It is a clever bit of educational work and will immediately command the attention of children. The reviewer tried it out by exposing it on the table of his living room. Every child in his family and all the children who came to call picked it up as soon as they saw it and it was not laid down until it had been carefully looked over. Children love to draw comic pictures. Why shouldn't teachers guide some of their pupils' activities into making original health comic pictures. Try it out some day.

THE city of Baltimore has recognized its responsibility for safety by getting out this excellent course of study on safety.[2] As practical educators the makers of this program realized that their purpose could not be achieved by simply assigning such instruction to fifteen minutes a day, week or month. Their plan was rather to provide for a series of experiences more or less civic in character that would lead children to think, feel and act "safety." As a result of a careful analysis of the content of the complete program of instruction they

1. The Adventures of Eva, Pora and Ted. Pp. 6. The Evaporated Milk Association, Chicago, 1931.

2. Course of Study in Safety Education for Elementary Grades, City of Baltimore. Department of Education, Baltimore, Md.

were able to find many opportunities for such instruction in their working elementary curriculum. Units of instruction are carefully organized in different subjects, such as history, geography and general science. The instruction is not limited to the acquisition of facts but also provides for the inauguration of safety organizations in the schools. This course of study is well planned and should lead to worthwhile outcomes.

DR. JOHN B. MORGAN has written so much helpful material for the teacher that his new book on child psychology [3] should receive a warm welcome. The book is written largely from the point of view of mental hygiene. It is a study of the normal child. There is an analysis of infant behavior, motor development, emotional development, motivation, language, thinking, work and play, but these are all visioned as a functional working unit in the complete personality. The child is studied as an integrated and functioning being. The chapter on the "integrated child" is especially worth while. The book is simply and clearly written. Teachers will find this volume a valuable addition to the literature of mental health.

THE need of more health instruction in the junior high schools is reflected in the increasing number of health books adapted for this part of our school system. "The Science of Human Living" [4] is one of the best books that has appeared. It covers the field of general hygiene with special reference to personal hygiene. The book is well written and carefully planned for the teacher. Each chapter attempts to motivate the pupil by presenting a number of questions to be studied while the projects are being attacked. There are "Things To Do" at the end of each chapter.

The book is simple in style and direct in its approach. Although the authors in the preface state that "personal and community hygiene are given the foremost consideration" there is almost nothing in the book on community hygiene except some chapters on health in the home.

THE word "correlation" has been used so loosely that not only has it been difficult to define but it has gained a certain amount of disrespect among teachers. This address,[5] therefore, by Anne Whitney, director of the division of health education of the American Child Health Association, should command attention. As a result of a school health study Miss Whitney found that teachers were trying to attain their ends in a vague way. They vaguely sensed the desirability of integrated learning but they were not clear as to why or where this might be found in daily experience. One striking criticism of correlation in health teaching is the tendency on the part of misguided teachers to try to make all roads lead to health regardless of whether such roads naturally lead into fields in which information, interest and experience are naturally conducive to health behavior.

"Teachers," says the author, "are still centering their thinking on teaching technics rather than on the learning process. Why and when represent attention to child learning—the how to the teacher's participation in guiding or facilitating the learning process. . . . As soon as we really digest the fact that the learning is through using information rather than acquiring information, we shall think of related teaching more in terms of activities and experiences and the situations in which these occur than in terms of subject matter and subjects."

Miss Whitney shows in detail how instruction in healthful living is to be imbedded in life's activities. Teachers in classes in health education will find this paper a basis for class discussion and careful planning.

EVERY year the American Public Health Association publishes an excellent bibliography on health books.[6] This is a careful compilation of lists of books in the various fields of health. Although the names of the publishers are not given, any book listed may be purchased directly from the American Public Health Association. A postal card will bring this invaluable bibliography. Every teacher should have a copy. It will not only assist the teacher in building a home library but will also offer suggestions for the school and community library in health.

THE difference between good and bad children is probably a difference of degree rather than kind. Every human being, whether he is an adult or a child, attempts to do the things that will lead to happiness or that will avoid unhappiness. The difference between children is in the roads they take to attain these goals. It is not simply the experiences that the child has but the way in which he interprets his experiences and feels about things that really count.

In this excellent book, "The Story of Fifty-Five Bad Boys," [7] Dr. Hartwell, a skilled psychiatrist and lover of boys, tells us vivid and human histories of unfortunate boys and the steps that he took to understand them and guide them along sociably acceptable paths. This is a book that every teacher of adolescent boys should read and ponder over. It will not only give the teacher an insight into the life of problem boys but will also help in the understanding of normal boys.

Although psychiatry is a developing science it is evident that anybody who has a friendly interest in boys and can gain their confidence may do much to guide them aright. Dr. Hartwell admits this. In the case of one, he says: "At the end of the first interview Ralph asked: 'Have you any little boy of your own? A kid would be lucky who had you for a dad'." Continuing Dr. Hartwell says, "He was in personality contact with me. This was a deeper rapport than was really needed and deeper than was utilized in thinking with him. It came without any effort on my part. It would have occurred with any adult who listened to the lad without patronizing him and who intelligently answered his questions."

IT IS generally recognized by psychologists today that the first six years of a child's life are the most important years of his career. It is during this period that the child acquires the habits and attitudes that are to play a prominent place in his subsequent life. The basis of both physical and mental health is then determined. The study of the physical and mental breakdowns of later life point back to a defect in child care and training in these early years. This is the period during which the parents reign supreme. They are teachers and influence to a great extent the success or failure of the coming man or woman.

To this land, which is still largely untouched by scientific knowledge and practice, Dr. Arlitt contributes a volume [8] for the education of parents. It keeps close to the facts of childhood, presents concrete examples and suggestions and is written in a language that the layman understands. This is a book that should be read by kindergarten and primary teachers. It will give them a better understanding of the handicaps and advantages of children at school entrance. It is an excellent volume to lend to parents.

3. Child Psychology. By John B. Morgan, Ph.D. Pp. 474. Richard R. Smith, New York, 1931.

4. The Science of Human Living. By Mae Johnson Corwin and Walling Corwin. Pp. 464. Harr Wagner Publishing Co., San Francisco.

5. Correlations — An Analysis of Procedures in the Integration of Health Instruction. By Anne Whitney. Pp. 10. American Child Health Association, 450 Seventh Avenue, New York.

6. A Catalogue of Health Books (with prices); a Bibliography on Public Health and Allied Topics. Pp. 23. American Public Health Association, 450 Seventh Avenue, New York, 1930.

7. By Samuel W. Hartwell, M.D. Pp. 359. Alfred A. Knopf, New York, 1931.

8. The Child from One to Six. By Ada Hart Arlitt. Price, $2. Pp. 188. McGraw-Hill Book Company, New York, 1930.

New Books on Health

THE LUNGS

By Lawrason Brown, M.D., and Fred H. Heise, M.D. Pp. 151. Price, $1.50. D. Appleton and Company, New York, 1931.

THE ability of Lawrason Brown to write understandingly for the average reader has been well established by his contributions on tuberculosis. The present book begins with a good statement on the anatomy and physiology of the lungs and follows with a discussion of the germ cause of tuberculosis, the changes caused by the infection, the methods of diagnosis, prevention and treatment. It is a compact book printed in good clear type and tells everything that any one afflicted with tuberculosis ought to know. The book is sold, moreover, at an extremely reasonably price considering that the information it gives is invaluable.

MORRIS FISHBEIN, M.D.

THE YOUNG DOCTOR THINKS OUT LOUD

By Julian P. Price, M.D. Pp. 187. Price, $1.50. D. Appleton and Company, New York, 1931.

MOST of the articles on medical education are written by medical educators. This book is planned, rather, to tell what the subject of the education, namely, the student and intern, thinks about it. It serves, therefore, to a considerable extent as a guide to young men who are thinking of taking up medicine as a profession. Dr. Price analyzes the reasons why men decide to make medicine their career. He then discusses the importance of a premedical education and the subjects that it ought to comprise. His primary criticism of education in medical schools concerns the time devoted to the unusual rather than the common complaints and diseases. He criticizes the medical school for failure to develop in students a spirit of scientific inquiry, an honest skepticism. It must be realized that medical schools have no certain way of selecting students who are likely to have scientific minds.

Dr. Price feels that interns ought to be paid for their services. Probably they should, but the tradition of medical training makes the intern an apprentice and the traditions of apprenticeship are well established.

Vocationally the author writes of Army, Navy and Public Health Service, of general practice and specialization, of group clinics and similar methods. He recognizes the importance of personality in the development of a good clientele.

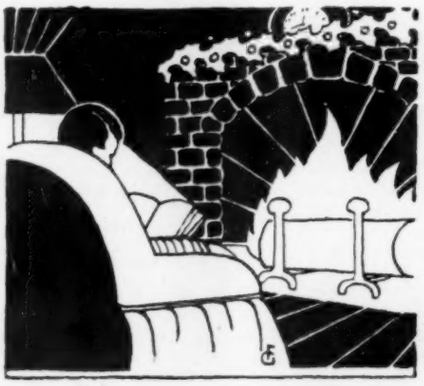
In his concluding chapter, Dr. Price discusses medical idealism, which he recognizes is just as necessary today as it ever was. He is unable to answer the question as to medical practice of the future. He concludes, indeed, with the same questions that are forced on every other writer who attempts to judge from present trends in medicine what the coming years may bring. The nature of the practice of medicine is in a period of evolution. Men who know their medicine fear revolution. Since medicine is one of the biologic sciences it seems reasonable to believe that any antibiologic system that may be evolved will inevitably fail.

M. F.

STEPS IN THE DARK

FROM THE NOTEBOOK OF MODERN SCIENCE. By Milton Mayer and John Howe. Pp. 227. Price, $2.50. Thomas S. Rockwell Co., Chicago, 1931.

THE interpretation of science for popular audiences has come to include some of the most interesting writing of our day. The authors of this book are two young news-



paper men who interpret almost thirty scientific investigations. Their many new discussions include the use of the lie detector, a machine that, by recording variations in the blood pressure, indicates whether or not a suspected crinimal is telling the truth. They discuss word association tests, the development of the new dictionary of the American language, and Babylonian and Assyrian investigations.

Occasionally, as is not infrequent among untrained writers on scientific subjects, the authors give premature promotion to an unestablished discovery. Of this type is the article on Falk's discovery of the cause of influenza.

On the other hand, the work of Luckhardt on ethylene, of Maud Slye on heredity in cancer and of Carlson on hunger represent well established scientific accomplishment. The work of Koppanyi on the transplantation of eyes and of Lashley on the brains of rats is also presented in an interesting manner.

M. F.

COMMON PESTS

HOW TO CONTROL SOME OF THE PESTS THAT AFFECT MAN'S HEALTH, HAPPINESS AND WELFARE. By Rennie W. Doane. Cloth. Price, $4. Pp. 397, with 215 illustrations. Charles C. Thomas, Springfield, Ill., 1931.

THE author intended this work "as a manual or ready reference book for the farmer, the stockman, the gardener, the householder and all others who may at times be more or less troubled with pests." The book includes mainly pests of the United States, wherein nothing is omitted except the human pests. Because of the wide range of subjects covered—from chiggers to wolves—only the most essential facts in regard to each topic are discussed. Section one, composed of ninety pages, is devoted to pests of man and domestic animals. Among them are mites, ticks, mosquitoes, flies, bedbugs, lice, fleas and parasitic worms, of which not only something of the life history is given but also the diseases which they disseminate and simple methods of protection against them. Section two, of nearly 300 pages, is mainly of economic interest, dealing with pests of fruit trees, berries, grapes, vegetables, field crops and flower beds. Two chapters are devoted to certain mammals and birds that make nuisances of themselves.

The book may be safely recommended. The language is simple, the illustrations are profuse and the index is adequate. The make-up is in keeping with the high standard of Thomas books.

Thomas G. Hull, Ph.D.

QUESTIONS and ANSWERS

Body Odor

To the Editor:—Is there anything to use in the bath water that will help to eliminate body odor? I bathe nightly with complete change of clothing every morning. C. S., Oklahoma.

Answer.—A daily bath with soap and water is all that is necessary to keep the skin of the body fresh. No unusual odors will occur if this is done. A small proportion of people are hypersensitive about their own body. Their sense of smell exaggerates the little odor that is present. There is no substance that can be put in the bath water and used with safety to change the skin odor.

Fumes from Molten Metals

To the Editor:—Are the fumes from molten lead, tin, zinc, babbit and similar metals injurious to the lungs? H. C. C., Arizona.

Answer.—None of the metals mentioned cause injurious effects to the lungs themselves, but some of them are absorbed and give symptoms and signs of systemic poisoning.

Lead is the most important of these, its chief effect being on the blood and the nervous system. The red cells of the blood are destroyed and made fragile; anemia results. Lead also has a distinctly injurious reaction on nerve tissue, causing paralysis and incoordination.

Zinc fumes, according to some authorities, produce what are known as "zinc chills," which have an effect on the body similar to that of influenza. This is temporary and passes off usually without other difficulty.

Neither copper nor tin fumes are supposed to have definitely injurious effect on the body. Antimony may produce intense itching eruptions of the skin, inflammation of the mouth, throat and stomach, constipation and colic, general weakness, vertigo and faintness. There is doubt as to its effects on different persons, but the foregoing observations have been noted. Babbit metal usually consists of antimony, copper and tin.

Any metal that produces poisoning acts much more rapidly when it is inhaled in finely divided particles by the lungs, since these particles get immediately into the circulation and are absorbed. Methods of protection against such inhalation are now well known in industry.

Rise of Temperature in Afternoon

To the Editor:—Could a slight fever occurring in a diabetic person in the afternoon be traceable to impurities in the insulin that is injected? Examination of the chest by a stethoscope and percussion fails to diagnose tuberculosis. The patient, 20 years old, has no difficulty in maintaining weight. No other symptoms of tuberculosis are present. The fever rises to about 99.6 F. in the afternoon, and sinks to normalcy at night. H. H. S., Wisconsin.

Answer.—It is improbable that the fever could be due to impurities in insulin. If it were, there would be a local inflammatory reaction at the site of the injection.

In spite of the negative physical observations in the chest, it might be desirable to have an x-ray examination to see if there is an active process in the lungs. There are a number of other conditions that might be responsible for the rise in temperature in the afternoon, but the elimination of the possibility of tuberculosis is essential.

Removal of Uterus

To the Editor:—Having recently learned that a woman ceases to menstruate after the complete removal of the uterus, I should like to know if monthly cramps and pains are felt after the uterus is removed. Under what conditions is the uterus removed? Is the operation advisable in a girl of 20? E. G., Minnesota.

Answer.—The sensations following removal of the uterus vary considerably, depending chiefly on whether the ovaries are removed or not at the same time. Removal of the uterus is done to correct some functional or anatomic fault in the organ itself; when this fault is cured, the patient should feel better. She should have no further pain or excess bleeding.

If the ovaries are normal and are not removed, as is the preferred treatment in young women, there may recur for some months after the operation the sensation often preceding menstruation but cramping pains such as those that sometimes characterize the period should not recur.

If the ovaries are removed with the uterus, as is done at times in older women, the symptoms following would be about the same as those present during the change of life, and these are variable indeed.

Removal of the uterus is not advisable in a young woman of 20, but this might be necessary in extensive pathologic changes resulting from severe forms of pelvic inflammation, in certain nonmalignant tumors such as the common fibroid, and always in malignant tumors, such as cancer.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Early Eruption of Teeth

To the Editor:—My daughter is 4 years and 10 months old. A week ago she lost her two lower front teeth. They erupted when she was 6 months old. I am uneasy about this change, especially since the two new teeth are coming in crooked. She never sucked her fingers, always had plenty of milk and cod liver oil and has always had the juice of an orange each day. The first set were perfect. They are white and well spaced. None are decayed. What is the possible cause and is there a remedy? H. E. A., California.

Answer.—This mother is to be congratulated as a wise parent. She has not only fed the child according to the most approved diet known to science today but she has kept intelligent records of the child's development. This is a rare virtue even in loving mothers.

There is no need to worry about the eruption of this child's teeth. She is shedding her first set a little earlier than is usually the case, but these things are not always constant even in perfectly normal children. The slight irregularity of the two permanent teeth need cause no concern. When the jaw expands these teeth will probably come into line. It is better not to seek a "remedy" for early eruption of the teeth.

Turnips

To the Editor:—What is it in turnips, raw or cooked, that hurts so many people? There seems to be an after-effect after eating turnips for part of a meal.

W. T., Indiana.

Answer.—Turnips do not hurt many people. They are widely used throughout the western world, including Europe. They are low in nutritive value, having a large content of water and indigestible residue, but they form a suitable part of the dietary of many persons, apparently without harmful effect.

In the case of most vegetables, as well as many other foods, there are a certain number of persons who have what is called an idiosyncrasy against them; it is doubtful if this group is larger in the case of turnips than of other foods.

Infants' Rash

To the Editor:—I have a baby, 1 year old, who is healthy and strong, and weighs 22 pounds. I have started him on whole milk and he now drinks 1 quart a day with other foods, including a little butter in vegetables, such as spinach and carrots, and also cereals, cooked prunes and applesauce. He has a rash on his hands and face, which goes away and then reappears. This rash started when he began to eat different foods at 5 months. At first, there were little water blisters, but now there are red blotches, which always seem worse in the afternoon. I have stopped giving him cod liver oil and eggs. What foods could cause this sensitization? The milk is boiled for three minutes. He has four teeth. Should he have more at his age? He does not creep but can stand holding to a chair. He has plenty of sunshine. Is he about the average?

N. F. G., California.

Answer.—This baby is about the right weight; a child of 1 year usually weighs around 20 pounds. It is quite possible that he is getting a little more food than he needs. It would be well to go over this matter with the baby's physician and have him work out a diet program on the basis of the caloric values of the items of food.

Just what particular food might be responsible for the rash can be determined only by tests. The trouble may come from the food or it may come from some other source. The mother was wise to stop the use of eggs for the time being. No mention was made of orange juice or tomato juice in the baby's diet. These should be given, especially when the milk is boiled. Boiling destroys some of the vitamins in milk, and these are supplied in orange or tomato juice.

Reduction of Girth

To the Editor:—My husband, 24 years old, has developed a "bay window" which is quite alarming to me and somewhat to him. I try to keep our meals balanced, and he manages to get a good work-out in exercise once a week. This, of course, is not sufficient to reduce the layer of fat that extends well up to the chest. Is there a specific setting-up exercise that he could use in removing these extra inches?

J. M. P., Louisiana.

Answer.—Reduction in weight is accomplished by both diet and exercise; diet as a rule is the more important. Even when one firmly resolves to cut down the amount of food he eats, the temptation to exceed the absolute minimum with which one can get along is great. As to exercise, HYGEIA has published a pamphlet entitled "Eleven Exercises for Business Men," which is listed in the catalog of publications of the American Medical Association. Most of these exercises are helpful in reducing weight, and a few of them are especially helpful in reducing the girth. A pamphlet on obesity, which discusses the matter of both diet and exercise, has also been published by the American Medical Association.

When one finds that he is constantly slipping in his good resolutions to eat less and exercise more, it is a good plan to put himself into the hands of a physician who will carefully work out a diet that will be just less than sufficient to afford the necessary food to maintain the weight of the patient, thus bringing about a steady loss of weight for a time. When a plan of procedure is outlined by a physician in whom one has confidence and when the patient reports to the physician at regular intervals, he is much more likely to live up to the regimen outlined than when he manages the matter himself.

Drops in Eyes

To the Editor:—Are the drops that are placed in the eyes in order to dilate the pupils harmful or not? I have heard that this sometimes causes the eyeball to harden and that often the pupil does not contract to its normal size. Is there any foundation for such reports?

J. M. B., Oregon.

Answer.—The drops put into the eyes to dilate the pupils as used by a skilful oculist, who is a physician as well, are not harmful. The procedure is often indispensible in getting the results that must be secured in the fitting of glasses. They are used only for a brief period and in that way they do not tend to harden the eyeball.

Cancer

To the Editor:—Will you please tell me how cancer is scientifically diagnosed? My sister recently died of cancer. I wish to be sure that the diagnosis was correct.

S. A. M., New York.

Answer.—Cancer presents a great variety of conditions and signs in different parts of the body at different stages. The diagnosis is made by the growth's appearance, the manner of development and, especially, by microscopic section of a portion of the tissue involved. This is readily obtained, of course, after the death of the patient but not infrequently a portion of tissue is removed during life, a procedure that is known as a biopsy. Then a decision can be made as to whether or not the infected region should be removed.

Tonsils; Tobacco

To the Editor:—1. What harmful effect can removal of the tonsils have on the general health? Will the operation relieve one of head noises that are caused by catarrh in the ear tubes? Is ether or gas necessary for this operation? 2. I use tobacco to excess, about 10,000 cigarets a year, and I chew some too. I stopped the use of tobacco a few years ago for two and a half years, but I was far more nervous at the end of that time than I am now, although the head ringing had almost ceased. I am 33 years old, and feel that I am being slowly poisoned, perhaps more by tobacco than anything else. I dread to discontinue the use of tobacco because of the nervousness that follows. I rarely drink anything stronger than water. I perspire freely and seem weak and nervous after hard and fast labor and have a pounding heart after such work. Advice will be appreciated.

F. B., Illinois.

Answer.—1. As a rule, the removal of the tonsils has no effect on the general health except to improve it because frequently the focus of infection in the tonsils that has been responsible for some disease condition is removed by operation. Whether or not such an operation would improve the condition of the ear is something that can be determined only by one who has examined and studied the patient.

The removal of the tonsils in adults is often done under local anesthetic, but under special circumstances in the case of nervous or timid persons a general anesthetic, gas or ether, is best.

2. It is probable that the other symptoms are due to excessive smoking. There is no specific cure for this habit, but it is seldom that one who is addicted to the use of tobacco cannot abandon it.

Loss of Senses of Taste and Smell

To the Editor:—I beg for information to relieve me from loss of the sense of taste following a mild influenza about a fortnight ago. I am the more concerned since some years ago, from the same cause, I partially lost my sense of smell, and my sense of taste was also impaired. This has persisted up to the present but I have adapted myself to the affliction. The present condition is much more severe. Following the influenza my appetite returned, but it is a mere organic need for sustenance, and there is no pleasure from quality or savor. I can scarcely force down the simplest foods. Do come to my rescue.

M. T., Maine.

Answer.—The sense of taste depends largely on the sense of smell. When the sense of smell is temporarily lost during an acute head cold, it is almost impossible to taste anything. However, after these acute infections, the sense of smell usually returns, and with it the sense of taste. It is doubtful whether there is any endocrine disturbance causing this trouble.

In order that substances may be smelled, it is necessary that the odorous particles be carried by the air current to the uppermost portion of the nose, to that region in which the terminal filaments of the olfactory nerve, or the nerve of smell, are situated. There may be mechanical disturbances in the upper portion of the nose either accompanying some acute infection such as a head cold or resulting from some chronic trouble that may disturb the sense of smell. In the second place, certain conditions involving the olfactory nerve itself either in the nose or at the base of the brain may cause diminution in the sense of smell or its loss.

Some persons either are born without the sense of smell or lose it in early childhood, and often the exact cause of this impairment cannot be determined. It would be advisable, however, to have a Wassermann blood test made to rule out a certain definite involvement.

Aside from the change in the sense of smell affecting taste, there is also the possibility of some impairment of the nerve supplying certain portions of the tongue, which might be the cause of the disturbance in taste. This nerve is sometimes affected in certain ear infections. It would be advisable to consult a physician and have him test the sense of taste with bitter, sweet, salt and sour substances, in order to see to what degree the sense of taste is really changed.

There is no need for taking such a desperate view of the situation because it is quite possible that the sense of smell will improve and, with it, the taste.

Emotional Disturbances

To the Editor:—I am 27 years old and have been married six years; my health is not bad, although I am anemic. I am slightly overweight, being 5 feet tall and weighing 123 pounds. I am not supersensitive or morbid, although often I find myself exaggerating the hardships that befall me. If I am called upon to write anything when I am slightly excited or when some one is looking on, such as signing a slip for a registered letter, my hand shakes so that it is impossible for me to write. I am a stenographer by profession and you can imagine the havoc this plays with me. I am expert at taking shorthand and am often called on to take notes at public functions. Although I am more proficient than many present, I often bungle the job until it is almost impossible for me to continue. This period of trembling usually lasts only for a few minutes and then I quiet down and continue in an expert manner. If it is necessary for me to stay at a hotel and the clerk watches me sign my name on the register, my hand jumps back and forth until it is impossible to read what I write. Often simultaneous with this jerkiness and inability to write is a terrific pounding of the heart. I have tried many ways to get rid of this nervous habit but it has been impossible. I wonder if you can do anything for me?

R. G., Massachusetts.

Answer.—Since the difficulties in writing are temporary and occur only under certain conditions, it is obvious that they are not due to any disturbance in the nervous machinery itself, but must be the result of an emotional conflict which is in some way connected with the conditions under which the difficulties arise. The pounding of the heart and the feeling of fear and nervousness are additional evidence of the emotional nature of the disturbance; for it must be remembered that it is normal for the heart to act more vigorously in states of emotion; this is one of the jobs that the heart is built to perform and there would be something wrong if it did not act in this way.

When this conclusion has been reached, however, there still remains to be discovered the nature and associations of the conflict in the emotional life. The fact that it becomes manifest when under observation by others is the only clue offered in the account given, and this is not sufficient to enable any one to hazard even a guess as to the actual cause.

The first requisite for making this discovery is a frank discussion of the intimate facts and details of personal experiences and emotions in the life of the patient from childhood on; the causes may be more or less deeply buried and their discovery cannot be made by the patient alone and unassisted. The fact that the conflict comes to the surface in the form of the difficulty in writing in spite of the efforts made to control it proves that it is related to conditions which the patient cannot face without some change in his attitude toward the elements that are the real causes of the emotional conflict.

For this reason it is essential to seek the advice and assistance of a physician who is experienced in such studies and in whom the patient can repose the faith and confidence necessary to permit her to speak freely and without reserve of her most intimate thoughts and feelings. This effort is well worth while, for such problems are often capable of complete solution and consequent cure; it should be made as early as possible for the reason that the longer habits of reaction are continued the more difficult are they to break.

Removal of Tonsils

To the Editor:—I am enclosing an advertisement of the "office method" of removing tonsils. What is the nature of this method? What would be the effect on a 3½ year old child? Is an anesthetic necessary? Is it bloodless? What is the duration? Is it to be preferred to surgery? Is this method cheaper?

F. K., Illinois.

Answer.—While it is true that a few physicians still remove tonsils in their own offices, as a rule, when an office method of removal of tonsils is advertised it refers to the destruction of tonsil tissue by the electro-coagulation method. This is done under local anesthesia, but it is inconceivable how it can be carried out in case of a child 3½ years old. The method is bloodless so far as the procedure at the time is concerned, but when sloughing occurs a week or ten days later, a secondary hemorrhage is likely to occur just as after a tonsillectomy. Furthermore, it is practically impossible to remove the tonsils at one sitting, which means that the patient must wait for a week or ten days until the reaction has subsided and then the method is reapplied. As a rule, it takes from four to six sittings to accomplish the result.

Considering the amount of time involved, it hardly seems possible that this method will be cheaper than surgery, and it is certainly not to be preferred to the regular surgical removal of tonsils, unless there are some urgent contraindications to operative procedures. If the tonsillectomy under ether anesthesia is in proper hands, it is rarely accompanied by bad results in the child.

Teeth and Diet

To the Editor:—Is it possible to harden the teeth of an adult, 42 years old, and to keep the nerves of the teeth well nourished? Is viosterol valuable for this purpose; name some foods that harden the teeth.

H. M. S., Pennsylvania.

Answer.—The fallacy of hard and soft teeth has too long been prevalent. It is not possible appreciably to harden the teeth of an adult of 42 or of any age after the teeth are once developed in the jaws. Teeth are not constantly being built up and torn down as are the other tissues of the body; the enamel is the most stable of all structures. The teeth naturally grow a trifle harder as age advances, but not sufficiently to affect the tendency to decay.

Good food is important in the building of the teeth, and in the maintenance of a healthy mouth, but the chief value of food is expressed in a change in the environment in which the teeth are placed rather than a change in the tooth structure itself. The question of diet as it affects the teeth is too involved to be considered in a brief article. The most pertinent advice is to eat simple, wholesome foods and, above all, to masticate them well.

Treatment for Syphilis

To the Editor:—Is it true that medical treatment for syphilis may produce blindness in one whose eyes are weak? If several months have passed before treatment is started, is the treatment effective either to cure or to prevent the spread of the contagion? I am under the impression that the average physician does not like to take cases of venereal disease. Why is this, and where should one go for examination if he suspects an infection of this kind?

B. D., New York.

Answer.—Medical treatment for syphilis rarely affects the eyes, unless the patient already has a syphilitic lesion which is made worse by mistaken use of certain drugs commonly employed in treatment. Most of the blindness associated with syphilis is due to the disease and particularly to the degenerative process in the optic nerve, which is connected with certain aspects of locomotor ataxia.

There is one notable exception to the foregoing statement as to the relative harmlessness of treatment for syphilis and that lies in the use of a drug known as tryparsamide, which is employed in the treatment of syphilis of the nervous system, particularly general paralysis. Tryparsamide has a definite injurious effect in occasional cases (probably not exceeding 1 or 2 per cent) on the optic nerve, but this can be avoided by careful testing of the eyes by an eye specialist under proper direction, before and after the use of the drug.

It is not desirable, in general, to delay treatment for syphilis several months after the onset of the infection, for the patient remains infectious during the period prior to the institution of treatment and may spread the disease. For this reason in particular and also because the prospect of completely arresting the disease is much better when treatment is instituted early, those most familiar with the problem advise that every possible effort be made to begin treatment at the earliest possible moment. The term "cure" in connection with syphilis must be used with some qualification, as only a lapse of years can determine whether or not patients whose symptoms have been controlled by modern methods of treatment actually are cured. It is proper to say that the large majority of syphilitic infections can be completely arrested and that patients can go through life without transmitting the disease to others and without showing any signs of it themselves if their cases have been properly managed and kept always under necessary periodic observation.

It is a mistake to assume that the average physician does not care to treat venereal disease. Government surveys have shown that 80 per cent of the venereal disease in this country is treated by physicians who, while they have a special interest in it, none the less rank as general practitioners.

If a person suspects that he has acquired a venereal disease he should consult a competent physician. Help in finding one may be obtained through the officers of the local county or city medical society.

Teeth

To the Editor:—I had four of my lower front teeth extracted, as they were loose. I want them replaced. One dentist says he can make a plate for the four teeth, and another recommends bridgework. Will you please advise me what to do? I do not want to have all of my teeth drawn, because they seem tight and are not bothering me.

A. C. T., West Virginia.

Answer.—This person should not have all his teeth extracted as long as they are firm and in a healthy condition.

To restore the missing teeth either a plate or a bridge may be used, the decision depending on the particular conditions in the mouth. Under favorable conditions a plate may be made to work satisfactorily; in other cases a bridge will be more comfortable. Usually a bridge is more expensive than a plate and less troublesome to wear.

Twilight Sleep

To the Editor:—What information can I obtain on the process known as twilight sleep in childbirth? Is it widely used? I have heard and read of physicians resorting to this in several cases. Is it detrimental to the health of mother or child?

E. J. L., Washington.

Answer.—Twilight sleep as a method of relieving the distress incident to childbirth is not widely employed but is still in use in some clinics where it was popularized some years ago. It is a method of relieving pain in labor by the injection of morphine and scopolamine. The woman is brought to a semiconscious state for a period of hours during which time the labor progresses to its termination, after which she does not remember her sufferings. It is not detrimental to the health of the mother. Some doctors think that its reaction on the baby is not good.

Every good obstetrician and every careful doctor who takes obstetrical cases has some system of managing labor and of alleviating the suffering that in his hands has proved most efficacious. The best advice to the pregnant woman is to put herself in the care of such a doctor, to follow his instructions and to submit to his method.

Tooth Bleaches

To the Editor:—I should like to purchase a bleach for the teeth. Please send the names of any bleaches or whiteners that are not harmful to the teeth, if there are any.

S. M. G., Illinois.

Answer.—Many tooth bleaches or whiteners on the market have been found to contain hydrochloric acid in various amounts. Hydrochloric acid is an active solvent of tooth structure and the use of preparations containing it may lead to deleterious results.

A recent reprint from the bureau of chemistry of the American Dental Association containing a report of an examination of Tartaroff, made in 1928, will give an idea of the composition of some of these preparations.

As a rule the active substances of tooth bleaches contain corrosives or other strong chemicals. In the event that the teeth become discolored to such an extent that bleaching is desirable, one should put oneself in the hands of a competent dentist. He can diagnose the cause of such discoloration and institute proper treatment according to the individual condition.

Some of the agents used by the dentist in bleaching teeth are concentrated hydrogen peroxide, chlorine-liberating solutions, and sodium dioxide.

Another Day Another Dinner

OR, as we might put it: woman's work is never done, for there's always a dinner to plan. We've been working from sun to sun in the grocery business too long not to appreciate *that.*

So—with a relish for good eating (and a prayer for the grocery business)—Colonel Goodbody talks each weekday morning on A & P's radio program, Our Daily Food.

He tells all the interesting things about food, and all the useful things about food—helpful information that is gathered by A & P's large staff of food experts. And every day he suggests a menu with directions for cooking it.

These menus are not one man's idea—or one woman's. They are well-balanced, scientifically studied meals. Each one has been prepared and tested in A & P's own kitchen. They are meals that please both the purse and the palate.

Of course you don't *have* to buy your food at an A & P store to get good results with the Colonel's menus. But it helps.

* * *

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Volunteer members of national and local associations found children who were suffering from tuberculosis, sent them to camps and sanatoria to recover —giving your children extra protection against exposure to disease.

Boy Scout and Girl Scout leaders gave up their holidays to teach clean living by word and example—a gift of better companionship for your children.

Big Brothers sat in stuffy court rooms to rescue waifs and strays who did not have home background to guide them—a gift of future good citizenship to your community.

You will probably never meet, nor be able to thank, the doctors and scientists who have waged campaigns to make it increasingly unlikely that you and yours should ever contract smallpox, diphtheria, typhoid fever or other communicable disease. In their laboratories they are searching for means to prevent premature death from cancer or heart disease. Magnificent gifts to you of health — perhaps life itself.

But you do know some of the great volunteer organizations which work for you continuously and ask your good will and support. At this season will you not "thank" two of them by wearing a Red Cross button and by using Christmas Seals?

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Mouth Conditions

To the Editor:—Is the saliva naturally slightly acid, or should the reaction be alkaline? A recent statement in an article seemed to suggest that saliva normally is slightly acid. What suggestions would you offer to keep the mouth in a normal healthy condition? Because there are so many highly advertised tooth pastes on the market, I should like to know how a person can judge which ones are the most valuable? The answers to these questions will be greatly appreciated. They often arise in some of my physiology classes. V. S. M., Washington.

Answer.—The saliva is not uniform in its reaction and may vary even within twenty-four hours. No one seems to know definitely whether it is normally acid or alkaline. Three prominent medical dictionaries say that it is alkaline; the present consensus of opinion is that it is slightly acid.

To keep the mouth normal, keep the whole body normal. The local care of the mouth relates to maintaining the full function of mastication and keeping the teeth clean by frequent and judicious brushing.

The only function of a tooth paste is to clean the teeth. Any therapeutic claims are valueless. Select the paste that leaves the teeth and mouth feeling the cleanest after using. A paste is a mere adjunct to the friction of the toothbrush.

Hernia

To the Editor:—What is the best thing to do for umbilical hernia? What is the formula of the salve that is used by the manufacturers of Stuart's pads for the treatment of hernia? J. S., Ohio.

Answer.—Neither pads nor trusses will cure hernia in an adult, except in rare cases. Such treatment will often cure hernia in an infant, especially umbilical hernia. A truss, when properly adjusted, often retains a rupture in the adult either in the inguinal region or at the umbilicus. In many instances a truss is worn without discomfort for many years and supports the abdomen, but it does not cure the hernia.

The use of an astringent such as that claimed to be contained in Stuart pads is ridiculous. Even when a powerful astringent is injected into the hernial canal, it seldom produces a satisfactory cure of the trouble, and it is always attended with some risk of a fatal outcome. The idea that such an astringent applied to the skin will cause closure of the hernial canal is fallacious.

Colitis

To the Editor:—May colitis be produced by gallbladder infections? Does gallbladder infection ever produce mild, chronic infections that are not very painful? Is the presence of gravel in the gallbladder usually painful? Why does an infected gallbladder disturb the digestive processes to such a great extent? Is it better to remove the gallbladder by an operation in case of chronic infection or should it merely be cleaned out so that it will function normally? Does age have a particular effect on it? What dangers or complications might arise through letting the chronic condition carry on through two or three years? If the infection is cleared by operation are there any after-effects, ordinarily? Does such infection affect the bile? Normally, how long does recovery from a gallbladder operation take?

E. D. T., Oregon.

Answer.—Colitis may be produced by an affection of the gallbladder and it may be mild or moderately severe. Pain is usually present to some degree. Many cases of urinary gravel may be painful only when the concretions are so large that they pass through the ureter with difficulty.

The liver and the gallbladder are intimately related to the other organs of the digestive tract. Naturally disturbances of these produce a disturbance of the digestive processes. Whether it is best to remove the gallbladder or merely to drain it is a question that must be decided in each case according to the condition present. The tendency has been in recent years to remove the gallbladder at most of these operations because it has been found that this secures permanent results.

For the most part, gallbladder disease is a condition of middle and later life. Many cases of inflammation of the gallbladder are endured for some years, but they should be relieved by operation or by treatment. The longer they continue the more likelihood there is of adhesions and other disturbances of the surrounding organs. In most cases in which a skilful operation has removed the gallbladder, prompt recovery has occurred. Recovery from such an operation is usually complete inside of three or four months.

Prostate Gland

To the Editor:—Can disease of the prostate gland be cured without surgery? M. E., Massachusetts.

Answer.—If hypertrophy (enlargement) of the prostate gland is meant, the answer is that some type of removal is the only cure.

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NOW... let's talk to you wives about *husbands*

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MOTHERS' groups studying child care emphasize the importance of self-help training, particularly in winter when heavy outer wraps must be put on. Authorities now recommend the Klad-Ezee Snugover Play Suit, as it enables the child to help himself, and saves time and work for mother.

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Temporary Sterilization

To the Editor:—I am a young married woman, 18 years old. I have been confined in a state sanatorium with a virulent type of pulmonary tuberculosis for some time. I have been advised not to have any children for a good many years. An x-ray treatment has been suggested as a means of temporary sterilization. What is your candid opinion of this method and what is the nature of the treatment and the results? How long does sterility last after the treatments? Is there danger of causing a permanent sterility? Is the method always dependable? J. W., Michigan.

Answer.—Exposure of the ovaries to roentgen rays is an excellent method of sterilization, provided complete or permanent sterilization is desirable. As for temporary sterilization, roentgen irradiation is surrounded with a certain measure of uncertainty.

Under the circumstances specified in the question, the method can hardly be depended on absolutely for temporary effect. At least the duration of the sterility cannot be predicted absolutely. If the idea of sterilization in this case were to test the effect of artificially induced amenorrhea (stoppage of the menses) on the tuberculous condition, the method might well be considered because the duration of the effect would be of secondary importance. But since the question concerns the use of the method to prevent conception temporarily its advisability is doubtful.

Diabetes

To the Editor:—Is it possible for a person to be diabetic when a urinalysis shows no sugar? I have a sweet taste in my mouth frequently, and at these times the stools and urine have a noticeable sickish sweet odor. Is this an indication of diabetes? Is an examination of the blood for sugar more reliable than a urinalysis? R. G. R., Minnesota.

Answer.—A urinalysis for sugar is not a true test for diabetes. The average diabetic person has a renal threshold of from 170 to 190 Mg. per hundred cubic centimeters of blood, which means that the blood sugar would have to be of 170 Mg. before it would appear in the urine.

The only reliable test for diabetes is a dextrose tolerance test, which consists of giving a weighed amount of dextrose on an empty stomach and taking blood sugar determinations at stated intervals. With the symptoms stated, we should suggest that a dextrose tolerance test be made.

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CHRISTMAS EVE IN A DOCTOR'S FAMILY

(Continued from page 1103)

"Why don't I go to bed as any sensible woman would? Just one more song and I'll not wait any longer."

Even as they sang the doctor's wife found rest and sleep.

Bells were ringing. Christmas bells? No, only the telephone. She started up, glancing at her watch; it was 6 o'clock. She reached for the phone.

"Merry Christmas, my dear!"

"Merry Christmas, yourself," she replied.

"There's a splendid baby boy out here. He arrived about 3 o'clock. I've had a little sleep. Now that it is light, I can get through. What about having breakfast with my girls in about an hour?"

"Well, rather. Please say a 'Merry Christmas' for me to the new mother. She has such a lovely Christmas gift."

Strange she didn't feel at all tired. And it was a Merry Christmas. The sun looked like a giant orange and the world reflected the glorious color. She prepared breakfast and had started the early preparations for the Christmas dinner before the doctor came in. She did not tell him how she had waited up most of the night and had finally fallen asleep in her chair.

"I'll say you look happy."

"I am, Mr. Doctor Man. Now drink some coffee and then wake Jean. She will want you to carry her down stairs to the tree. I'll get the baby for she is awake now."

Tenderly the doctor wakened his little pal.

"Merry Christmas, Jean."

"Oh, oh, is it? Merry Christmas, Daddy. Let's go to the tree."

The night of waiting was past. It was morning. In the heart of the doctor's wife the same words echoed and re-echoed, "Unto them a son is born." Again a young mother had brought forth her first born, and it was Christmas in all the world.

AWARDS ARE PRESENTED FOR SOCIAL WORK

Awards for distinguished social service to the city of New York offered annually by *Better Times*, the welfare magazine, have been given to the Emergency Employment Committee, the Welfare Council Coordinating Committee on Unemployment and the Multiple Dwelling Law Committee. All three committees have been active in emergency unemployment relief and in improving housing conditions.

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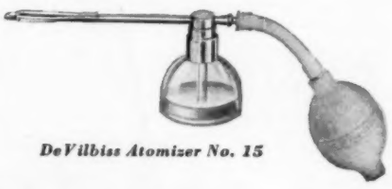

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TUBERCULOSIS FINDS FOE IN CHRISTMAS SEAL SALES

For twenty-five years in a nation-wide attempt to cure and prevent tuberculosis by rest, fresh air, proper diet and nursing care, the National Tuberculosis Association has battled against a powerful foe. Through the generosity of the American people, this association has been able to offer the Christmas gift of medical attention throughout

the year to unfortunate patients of this dreaded disease.

The greatest emphasis has been placed on the prevention and cure of tuberculosis among children and young men and women who, it seems, are less immune to this scourge.

It is a wise investment for those who are well, for the association provides for the patient camps, hospitals and sanatoriums that remove possibilities of further contagion. The National Tuberculous Association is appealing again this year in its usual form, which is the penny health stamp to be used in decorating Christmas packages.

SPINACH MAY NOW BE HAD IN PILLS OR POWDERS

"We aim to please" might well be the slogan of food chemists, according to a report in *Science*, which informs us that spinach may now be obtained in pills or powder, or, if we prefer, by a shot in the arm by a hypodermic needle.

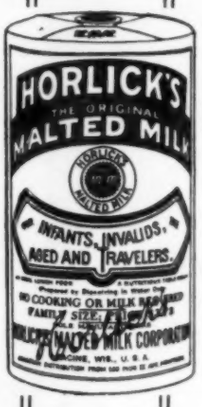
For carotene, a yellow coloring matter present in green leaves as well as in the yellow carrots for which it is named, seems to be identical with the basic material of vitamin A. The discoverers of the new process are Drs. Henry N. Holmes and Henry M. Leiscester of Oberlin College.

The substance can be produced from carrots in highly concentrated crystalline form economically and comparatively rapidly.

The test was made on a large number of animals lacking vitamin A, and the injected animals recovered their health.

Building resistance to colds—

Build up resistance to winter ailments through the use of Horlick's Malted Milk. This nourishing drink is also of great value as a light food during colds and as a means of regaining strength during convalescence.



Easily assimilated—A malt enzyme predigested food combining maltose, dextrin and lactose.

Highly nutritious—Horlick's provides the vitamins and minerals, as well as the other valuable elements, both of full-cream milk and the extracts of wheat and malted barley.

Tempting to the appetite—The experiments conducted by the Department of Pediatrics, Marquette University Medical School (Am. Jrl. Dis. Chil. **40:** 305) indicate that Horlick's Malted Milk, prepared with water, acts as a stimulant to the appetite.

Horlick's the Original Malted Milk

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

Horlick's **Racine, Wis.**

FREE SAMPLE AND WEIGHT CHART

HORLICK'S MALTED MILK CORP.,
Dept. H-14, Racine, Wisconsin

This coupon is good for one sample of either Horlick's Malted Milk (natural flavor) or Horlick's Chocolate Malted Milk and one Weight Chart for recording your child's growth.

Check the sample wanted ☐ Natural ☐ Chocolate

Name.....

Address.....

Let's Laugh Lots

This Winter—It's Good for the Digestion and It Doesn't Cost a Dime!

Here are the laughs (and how we need them these days), the brightly comic anecdotes, which have helped to keep the world young since the dawn of literature. Here are the neatly pointed epigrams, the brilliant repartee, the keen satire, the sparkling wit, the profound wisdom, which have helped to make the world wise. It is the most complete, authoritative, interesting and useful collection of the classic literature in our language.

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BLINDNESS IN CHINA IS INCREASING

The extent of blindness in China is increasing at an alarming rate, according to Dr. Lossouarn, director of the Medical College of Tientsin. An eye is worth less than an egg, this doctor writes in the *Review and Information Bulletin of the League of Red Cross Societies;* employers in the country rid themselves of the apprentices who have been blinded in their service and replace them with more human cattle.

Much of the blindness is the outcome of xerosis, a disease caused by malnutrition. This disease yields readily to treatment, once the patient is taken to the hospital and is given the necessary foods. One egg a week, says Dr. Lossouarn, would be sufficient to prevent this undernourished condition. In most cases the patient does not get to a hospital for treatment and affection of one eye is soon followed by an involvement of the other eye and total blindness.

Other causes of blindness in China are smallpox, trachoma, syphilis, gonorrhea and the customs of quack doctors. One of the most dangerous practices among quacks is that of pricking ulcers on the eyeball with a pin. In the entire country, there are only 2,000 home trained physicians, or less than one practitioner for every 20,000 persons.

The Tienstin League of the Red Cross is campaigning for the abolition of smallpox, but it is difficult to convince the Chinese of the value of vaccination and they have no natural immunity to the disease.

FRENCH TOWN HAS NO LUNG DISEASE

One city in the world is without a single case of diseased lungs. That is Billard de Lans, France, a health center for children. Only persons whose respiratory organs are in perfect condition may enter the town. Every traveler must have a physical examination by the parish doctor and procure a certificate to show to the inn keeper before he will be permitted to stay through the night. Even the villagers must submit to a regular series of examinations, and if lung trouble is discovered the victim must depart from the town within ten days.

Billard de Lans was established as a climatic center for children by a French philanthropist, Pierre Chabert. He wanted to offer sunshine of the Alps and fresh air to children and yet to protect them from contact with tuberculous patients.

BE "LITTER CONSCIOUS," NEW YORKERS TOLD

Residents of New York City are asked by the Committee of Twenty on Street and Outdoor Cleanliness of that city to be "litter conscious" and to assist in bringing about a new era of greater street and outdoor cleanliness. Suggestions made by the committee follow:

Put garbage and all waste materials, immediately, into tightly covered pails or cans, thus avoiding the spread of disease through cats, dogs, rats, flies and other vermin.

Bundle carefully all papers and other refuse before placing it on the street for removal.

Sweep the sidewalks frequently and keep them free from garbage, refuse and litter.

Sweep into the gutter between 6 and 8 a. m., but better still, collect such sweepings into receptacles for removal.

After a snowfall remove snow from sidewalks promptly.

Insist that building owners and janitors observe rules of cleanliness.

Refrain from throwing newspapers, fruit skins or other refuse on the street, sidewalk, parkways, vacant lots or in public places. Put them in cans that are especially provided for this purpose both indoors and outdoors.

Keep dogs from defiling sidewalks. Lead dogs to the gutter and keep the sidewalks clean for pedestrians.

BANANA POWDER HAS HIGH FOOD VALUE

A powder made from fresh raw bananas has been found by the Bureau of Home Economics of the United States Department of Agriculture to be an excellent source of concentrated vitamin G and B. The product is recommended for patients who frequently are unable or unwilling to take much food but who need food of a high caloric value.

It may prove of value in feeding children suffering from malnutrition and nursing mothers who need rich food. In some illnesses, fruit sugar as found in the banana powder is more easily digested than other sugars. The powder has a good flavor. When it was fed in measured amounts to rats, it enabled them to gain almost as rapidly as they did when they were fed fresh bananas. The vitamin C of fresh bananas is lost in the drying process.

The supreme misfortune is when theory outstrips performance.

—Leonardo da Vinci.

Protect your child . . . give him

KLEENEX

Disposable Tissues

MOTHER—when your child has a cold, don't neglect it! Health is at stake. With children there's always the risk of more serious developments! That's why it's so important to protect them from self-infection caused by the repeated use of germ-filled handkerchiefs. That's why thousands of mothers now give their children Kleenex instead.

DANGER in handkerchiefs

Scientific tests have identified 240,000 dangerous germs in a handkerchief used only once during a cold! Children can't possibly avoid self-infection when they carry these disease organisms back to their face time after time.

Use Kleenex and destroy

Now Kleenex forever ends this menace. Kleenex is a hankerchief tissue, so inexpensive that it's used but *once*, then destroyed. Germs are destroyed with it.

Children prefer Kleenex to ordinary soiled handkerchiefs—once they try it. Made of rayon-cellulose, Kleenex is softer than linen, more absorbent than anything! A positive comfort during colds.

And think of the convenience to you! No laundering—and every woman who's ever washed a dirty handkerchief knows what *that* means.

Other uses for Kleenex, too. Try it for polishing spectacles, for manicuring, for applying medicine. And for removing cold cream, Kleenex has no equal. Its super-absorbency is needed to blot all dirt and make-up from the pores. Sold at all drug, dry goods and department stores.

KLEENEX ***Disposable*** **TISSUES**

HY-12

Kleenex Company,
Lake Michigan Bldg.,
Chicago, Illinois.

Please send sample packet of Kleenex.

*Name*_____

*Street*_____

*City*_____ *State*_____

In Canada, address: 330 Bay St., Toronto, Ont.

Germ-filled handkerchiefs are a menace to society!

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U. S. PAT. 1,702,922

U. S. Pat. 1,702,922—Invented by Mme. Poix to Relieve Pain and Remove Cause of Serious Bust Troubles. Worn in bed as well as for dress.
Approved by New York Maternity Center.

Sizes 30 to 44

373 Pink Batiste	$1.00
279 Pink Repp	1.50
284 Pink Tussah Silk	1.50
285 Pink Mesh	2.00
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EXTRA LENGTH MODEL
(Wider from Top to Bottom)
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Aluminum—Adjustable
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A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movemen , even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.
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Mention HYGEIA when writing to Advertisers

BOGAN OUTLINES BROAD HEALTH PROGRAM

Health has recently been placed first among the responsibilities of education because without it no further education can be accomplished successfully. William J. Bogan, superintendent of the Chicago schools, outlines in the *Chicago Schools Journal* certain basic requirements of a health program. They are as follows:

Every school child should receive periodic health examinations by a physician before and during the school period. The results should then be made known to the parent and remedial action should be taken immediately.

Every child should receive a regular dental examination.

Every child should have instruction in health and in safety from accidents, and every teacher should be trained in health programs.

Every child has the right to play and adequate space and facilities should be provided. Furthermore, there should be proper supervision of playgrounds.

Every child should be protected against labor that stunts growth, either physical or mental; that limits education; that deprives children of the right of comradeship, of play and of joy.

Expert study and corrective treatment in which there is the possibility of relief and appropriate development of training should be given to every child who is blind, deaf, crippled or otherwise physically handicapped. Children with subnormal or abnormal mental conditions should receive adequate study, protection, training and care by a physician.

Those children who continually fail to meet the normal standards of human behavior should be provided special care under the guidance of the school, the community health or welfare center or other agency for continued supervision or control.

USE HEALTH IN PROGRAM OF ASSEMBLY

Health lessons prove to be excellent material for the school assembly, it is pointed out by the *Kansas Teacher*. The types of programs should depend largely on the local conditions in the school and community. The following subjects are suggested: Red Cross and Junior Red Cross work; the prevention of accidents; health habits; fire prevention; swat the fly; kill the mosquito; clean-up day; sanitation; physical examinations; safety first; posture; foods and the school lunch.

This Christmas Gift May Change A Child's Whole Future

Christmas has always belonged especially to children. It is for them that we busily lay plans, that we make endless rounds of shopping. Why not solve the gift problem thriftily and thoughtfully, for all the children on your list this year.

$1.00 BUYS AN 8 MONTHS' SUBSCRIPTION TO

The PARENTS' MAGAZINE
Formerly called "CHILDREN, The Parents' Magazine"

No gift can hold such a rich store of promise for the recipient as a subscription to The Parents' Magazine. No gift can bring such joy and satisfaction to a child's parents as this monthly counsel with the country's most helpful child specialists. As an authoritative advisor, it covers every problem of child rearing from crib to college—care, feeding, discipline, character training, play, social adjustments, book and movie guides, children's fashions — every article, every department written by people who *know* children and can help their parents understand them better.

NO OTHER DOLLAR GIFT CAN MEAN SO MUCH to both the child and his mother. A GREETING CARD will be sent with every gift subscription.

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114 East 32nd St., New York, N. Y.

I enclosed $..... for .....eight months' subscription(s) to The Parents' Magazine, to be sent to name (or names) on attached slip.

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Whatever Your Question
Be it the pronunciation of *vitamin* or *marquisette* or *soviet*—the spelling of a puzzling word—the meaning of *overhead*, *novocaine*, etc.

Webster's New International Dictionary
contains an accurate, final answer.
G. & C. MERRIAM CO., Springfield, Mass., U.S.A.

"A Child is to be Born"
Of the most absorbing importance to expectant mothers
AN ENCOURAGING AND SYMPATHETIC BOOKLET **15c**
American Medical Association · Chicago

NEW YORK COMMISSION SUGGESTS HEALTH REVISION

In an attempt to establish a good health program for the state of New York that would provide for a system of county health departments with full time health officers to be required by law, the whole field of public health administration in the state has cooperated for more than a year.

The object of the plan is to obtain uniform health protection and provide state control directly through the county. Dr. Thomas Parran, Jr., in an article in *The Journal* of the American Medical Association states this well:

"The commission believes that the substitution of the county for the town and village unit in health administration, and the replacement of part time, poorly trained health officers by full time, qualified personnel is fundamental to further health progress. It is only through such a plan that tuberculosis and the venereal diseases can be effectively controlled; that necessary attention can be given to the important problems of maternity, infant and school hygiene; that epidemiologic, laboratory and immunization measures can be applied for the control of the communicable diseases; that a generalized system of public nursing under competent supervision can be provided; that milk and water supplies can be safeguarded adequately and other elements of a modern health program can be provided."

The qualifications for health officers in large municipalities would include: (1) two years of resident study in an approved school of public health, plus one year of practical experience; or (2) one year of resident study in a school of public health, plus three years of practical experience; or (3) not less than the equivalent of five years of full-time practical experience in a responsible administrative public health position.

The commission believes that state control is the only method of checking tuberculosis, syphilis and epidemics of other communicable diseases. Present conditions in many municipalities are very poor.

HOSPITAL OPENS FOR NEGRO CHILD CRIPPLES

A hospital for the exclusive care of crippled Negro children has been dedicated at the North Carolina Orthopedic Hospital in Gastonia. The building was made possible by a bequest from the will of Benjamin N. Duke.

Dear Cleanliness Institute

"I'll tell you why we don't wash our hands oftener at our school"

"I read your advertisement about washing hands at school. Don't blame us. You wouldn't wash your hands either, if you went to my school.

"Half the time there aren't any towels. You get your hands all wet and then can't dry them. Then they get chapped. Have you ever had chapped hands?

"You wouldn't like to wash your hands in cold water in the winter time, either. You'd just pretend to wash them.

"And we always run out of soap. What's the use of washing without soap?

"And when lunch time comes you are so hungry and there is such a crowd around the basins. And at recess, too, you are in such a hurry to play.

"We wouldn't mind washing hands at our school if they'd just make hand-washing a little *nicer*. And if they'd help us to remember when we forget."

* * *

Dear "Grown-ups," that youngster just about summed up the argument for adequate handwashing *time, equipment* and *supervision*. 69% of our public schools "attend" to handwashing about the way his school does. (As indicated by a nation-wide survey.)

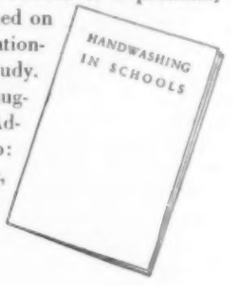
Perhaps the only thing the boy didn't make clear was why handwashing is so important. But you wouldn't expect *him* to know that 92% of all deaths attributable to communicable disease are caused by micro-organisms entering or leaving the body through the nose or mouth . . . that handwashing curbs this "traffic in microbes."

Nor would you expect him to realize how easily good or bad habits are formed in childhood.

Handwashing in schools *is* important. Will the teachers, parents and health officers of so many communities continue to let such conditions exist?

Send for this FREE book

Handwashing in Schools is a practical, helpful booklet, based on the findings of a nation-wide handwashing study. Specific, workable suggestions. FREE. Address all requests to: Cleanliness Institute, Dept. 6L, 45 East 17th Street, New York, N. Y.



CLEANLINESS INSTITUTE

Established to promote public welfare by teaching the value of cleanliness

INFANT WELFARE CLINIC IN BALTIMORE

An infant welfare clinic in Baltimore, founded in 1927 for research and experiment in administrative methods, reports recently that the station serves a total of 1,176 infants and children under 6 years of age. The clinic works in cooperation with the department of public health administration of the school of hygiene and public health, Johns Hopkins University.

Although it is intended to operate for teaching purposes, it is in all respects an integral part of the child hygiene service of the city, and in no way does it differ from the ordinary clinic except in dental service.

The clinic serves an area of thirty-two city blocks. The people living in this district are for the most part unskilled and semiskilled laborers. The Negro population represents 43 per cent of the whole and a large part of the remainder is of foreign birth.

The annual cost of the station is approximately $5,500, which includes two nurses on full time, two pediatricians, a dentist, and part-time clerical and janitorial service.

By means of certificates of birth, the nurses come into contact with babies soon after birth. Infants moving into the district are soon discovered. Effort is made to register all babies except those who are under the care of private physicians and to keep in contact with them until they begin school.

Tabulated material on the social background of these infants has been well kept. A large majority of the homes were not able to pay for the medical service.

General preventive service, exclusive of dentistry, costs about $4.30 per child per year, and dental service about $1.78 per child.

ITALIAN CHILDREN SENT FROM INSTITUTIONS TO PARENTS

A request of local authorities to remove as many children as possible from institutions has recently been made by the Children's Bureau of Italy. The children will either be sent to their parents or to foster homes. Only in those cases in which extreme neglect has been shown will the child remain in the institution. Until recently all children receiving public aid were sent to charitable institutions, to which the bureau contributed considerably. Financial aid will now be given the parents, the foster parents or the institution, as the case may be, by the national bureau.

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INSIST ON—
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NEON GLOW LAMP

Stairways are dangerous in the dark. A slip may mean broken bones—suffering. Safeguard your family by putting a 2-watt Neon Glow Lamp at the head of the stairs. Gives sufficient light—at about 3c monthly current cost. Lasts thousands of hours. At your local electrical dealer, or write for folder. General Electric Vapor Lamp Co., 410 Eighth Street, Hoboken, N. J.

If Your Child Could Explain to You

what helps him to behave rightly, you would never have a moment's trouble with him. Reading this sane pleasant little booklet by two trained specialists is almost the same thing!

"Training the Child to Obey"

by Smiley Blanton and Margaret Gray Blanton

15c *Paper Cover, 22 pages*
AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

MONEY, STERN LANGUAGE POOR AS DENTAL PSYCHOLOGY

The psychology that is used on a child in regard to the dental chair determines whether his attitude is one of fear or of common sense. Training children to become good dental patients can begin as early as the third year. Special toys, money or stern language should not be a part of the training, J. J. Guerrero, D.D.S., explains in *The Bulletin of the Chicago Dental Society.*

"One of the greatest injuries that can be committed against a child is the neglect of care of the teeth to a point where the child has a large cavity and has developed a severe toothache. With a child in this condition it is impossible for the dentist to do any kind of work without inflicting a good deal of pain. After going through the ordeal of having a tooth in this condition rendered useful or extracted, a child will not be interested in going to a dental office unless it is for relief of severe pain. Very often children would rather stand for the agonizing pain of a toothache than submit to treatment by a dentist."

Hygienic care of the mouth, proper mastication of food, and motivation of health habits are suggested. A second list is added: (1) Children should become acquainted with the family dentist early in life; (2) whenever the opportunity presents, they should watch others having dental work done; (3) they should be trained properly to cleanse the mouth; (4) whenever possible, foods should be of the type that require definite chewing effort (macaroons or coconut cookies are examples); (5) effort should be made to prevent habits such as thumb-sucking, mouth-breathing, lip, tongue or finger nail biting.

LONG TROUSERS SHUT OUT ULTRAVIOLET RAYS

Long trousers are not the ideal clothing for small boys, according to Hazel E. Hill, extension clothing specialist at the University of New Hampshire. They prevent ultraviolet rays from reaching the legs; they collect more dust than the sensible short trousers and in general cramp the style of the active boy in playing, says Miss Hill.

If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them.
—Thoreau.

EDITORIAL FLAYS QUACK AS ENEMY OF SCIENCE

The quack and the charlatan, enemies of true scientific progress, range in character from the often well meaning but ill informed pseudoscientist to the outspoken impostor. The layman and even the professional are often unable to distinguish between the truth and the falsehood. One disastrous result is that science in its research is far ahead of the average person, who is unwilling to accept the scientific discovery because he has either lost confidence in so-called science or senses the ridiculousness of certain types of sales propaganda. Valuable findings that could be used in practical living take a back seat for the words of one who can shout louder. This is the message of an editorial, "Quackery and the Neglect of Science," in a recent number of *The Journal* of the American Medical Association.

"The advertising and propaganda of commercial houses and purveyors of food have become so ubiquitous and at times have been so glaringly unscrupulous as to arouse critical resentment in the conservatively minded and to make physicians unreceptive even of authoritative information," says the editorial. "Gigantic signboards proclaim the therapeutic advantage of this or that. The air is filled with radio messages in song or in verse, extolling the special health-giving virtues of one food or another, ad nauseam."

HINTS ON CLEANLINESS OF FOOD IN HOME

Cleanliness, proper cooking and refrigeration are our best safeguards in care of food. Cleanliness prevents germs from getting into food, cooking kills germs that are already present, and cold prevents germs from multiplying.

In preparing food, the hands should be kept very clean, and no one who is sick with any contagious disease should be allowed to work in the kitchen. Foods, such as fruits or vegetables, should be well washed. In buying, persons should be careful of the kind of articles they accept. One should select a store in which dirt and flies do not accumulate. The customer should not select food that is overripe or decayed, because bacteria forms in such spots more readily. One should not choose food, moreover, that has been pawed over by a great many customers. Tainted and soured foods are unsafe and should never be eaten.

The

Favorite toothpaste

More people use it than any other kind

FOR 30 years toothpastes have come and gone. Today—as 30 years ago—and all the years between—Colgate's is still the biggest seller.

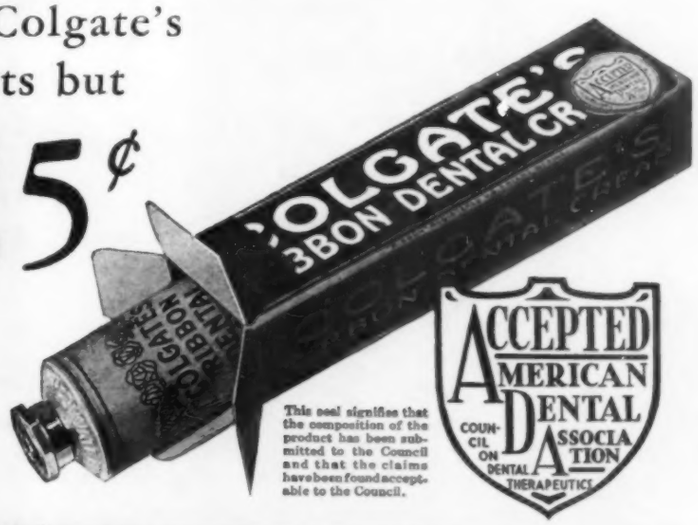
Why?...

Because dentists and users alike know that Colgate's gives the maximum results in thorough and healthful cleansing of teeth.

Be guided by this overwhelming preference. Clean your teeth tomorrow—and every day—with Colgate's—the world's most popular toothpaste.

And Colgate's costs but

25¢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This seal signifies that the composition of the product has been submitted to the Council and that the claims have been found acceptable to the Council.

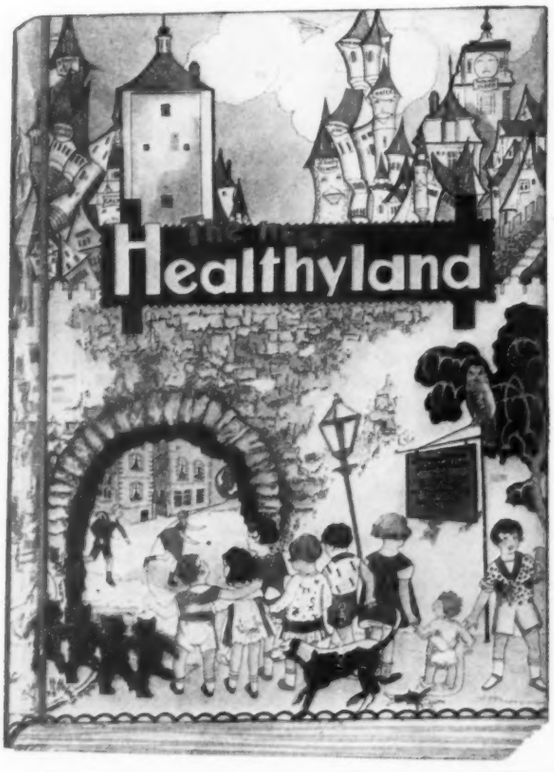
THE NEW HEALTHYLAND

A Wondrous Book of Health for the Children

The New *Healthyland,* a compilation of children's stories, plays, games and health activities from HYGEIA, is a successor to *Healthyland,* and its ideal is to make children enjoy the principles of healthy living. It raises the prosaic activities of eating and sleeping and getting out-of-doors into the glorious realms of the imagination where the fairies, the animals and other children from foreign lands participate in health games for the sake of rosy bodies and happy hearts. The New *Healthyland* is offered with a year's subscription to HYGEIA, at a most attractive price as will be noted below.

From the Foreword

Since the publishing of the original HEALTHYLAND in 1926, thousands of children have become ardent, loyal, Healthylanders. Some organizations have ordered Healthyland in thousand lots. One eager little Healthylander has worn out two copies and recently wrote for her third. The constant stream of orders and re-orders has reflected a definite need for another Healthyland.



Stories

Eighty-three pages in The New *Healthyland* are given to stories of gay adventures, fairy magic, talking animals, princes and princesses and far-away lands —all written to make the children love the ideal of healthy mental and physical living. Even parents will enjoy these naive tales of the Healthylanders.

Letters

There are eight letters about the health customs from the little people in remote parts of the earth, Italy, Holland, Japan, Australia. Beautiful borders in fancy colored ink depicting the countries from which they come illustrate the letters. When little Americans learn that even the foreign children are struggling healthward, their imaginations will kindle them to double effort.

Plays

Teachers, here is a gold mine of constructive entertainment for the children's health classes; here is a chance to give them action concerning health to keep them interested in their own little bodies. There are eight of these plays about kings and queens and courts, knights and ladies and glad out-of-door life. The children will love to produce them.

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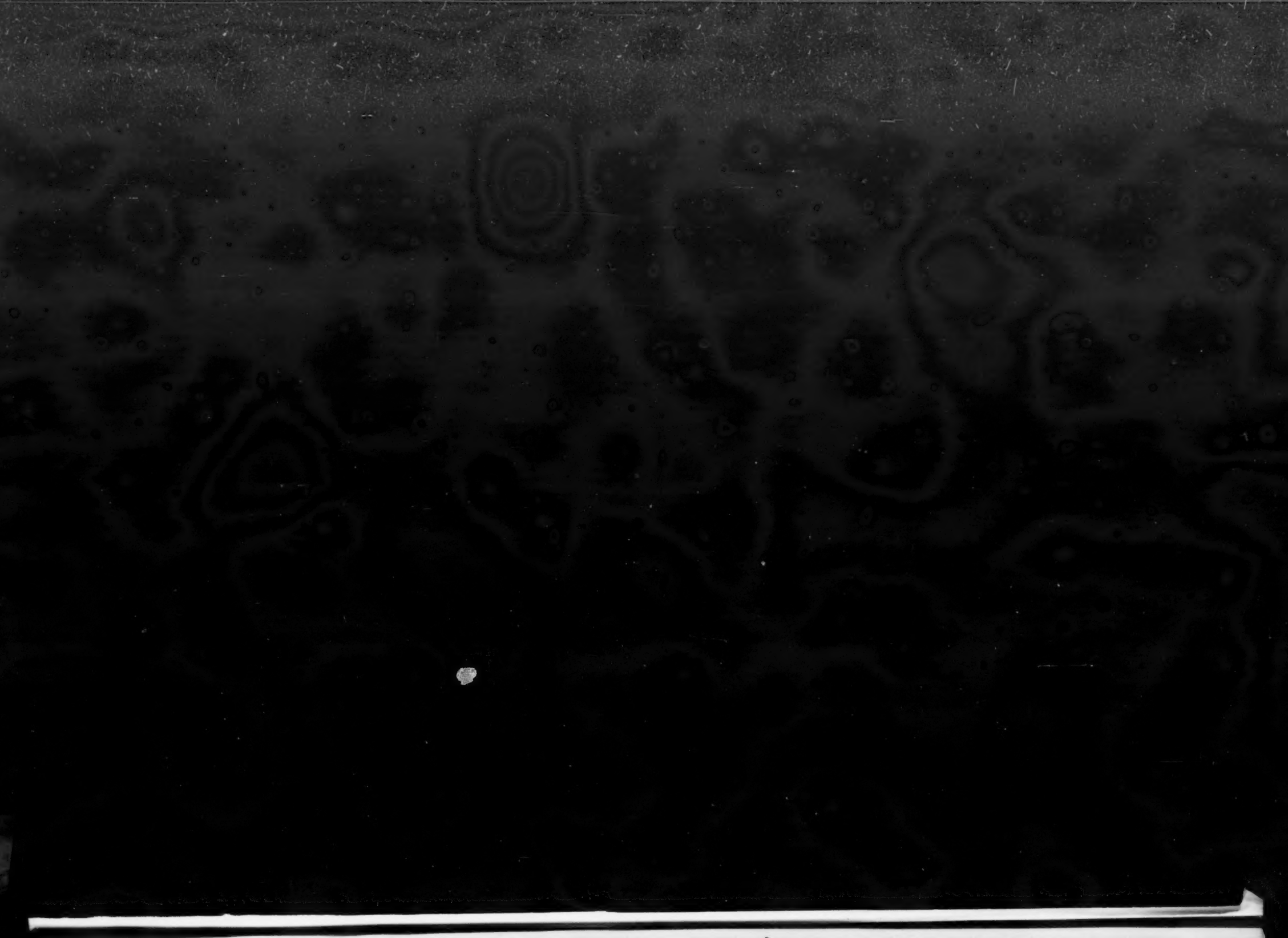
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